The KCVL Information Literacy Tutorial: An Assessment

Prepared for the Kentucky Commonwealth Virtual Library

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Abstract

The purpose of this report is to assess the *KCVL Information Literacy Tutorial* with view to identifying opportunities for improvement. The KCVL *Tutorial* is both a curriculum and a website.

Section I provides a review of some of the basic tenets of Web design. Studies of user behavior on the Web tell us that Web users don't read; they scan text (Tarasewich, 2000). "The most common behavior is to hunt for information and be ruthless in ignoring details" (Nielsen, 2000).

Section II presents an evaluation of the KCVL *Tutorial* as a Web-mediated curriculum. There is an inevitable tension between the purpose and packaging of a Web-mediated tutorial. Observations and recommendations are specific to each lesson as well as to the user interface.

Section III provides a summary analysis of the responses to the user survey implemented at the Tutorial website between August 4 and September 8. Responses generally indicate a full spectrum of expectations and opinions—the likely outcome of a heterogeneous user population.

Section IV addresses the issue of course management software as the sole delivery medium for the KCVL *Tutorial*. This leads to the question of whether the KCVL *Tutorial* should remain a dual-purpose learning module in a single format, or whether it should be re-designed for dual formats?

Section V presents a summary of observations and recommendations, and a conclusion—to re-purpose the KCVL *Tutorial* for two different applications: a curriculum designed for a course management platform and a cybercenter for information skills designed for the Web.

Introduction

The mission of the Kentucky Commonwealth Virtual Library (KCVL) is to ensure that "all Kentuckians will have equitable access to quality library and information resources and qualified, well-trained staff to support the Kentucky Commonwealth Virtual University as well as meet broader needs for learning, working and living." Consistent with this mission is a commitment to deliver information resources and services to students anytime, anyplace. (Kentucky Council on Postsecondary Education, 2000)

The authors of the *KCVL Information Literacy Tutorial* are to be applauded for their foresight, their commitment to virtual learning, their collaborative enterprise and the scope of their vision in crafting an online information literacy tutorial that is accessible to all of the citizens of the Commonwealth of Kentucky. Their task was considerable.

Authoring for a widely diverse audience, in a medium that is both dynamic and non-linear is rife with challenges. Moreover, the convergence of Web authorship, Web design and Web-based pedagogy sets the bar even higher. Use of a course management software platform (*Eduprise*) for the development and delivery of the *KCVL Information Literacy Tutorial* introduces yet another variable. There is no definitive blueprint for such an endeavor, only judgment guided by limited research.

The purpose of this report is to assess the *KCVL Information Literacy Tutorial* with view to identifying opportunities for improvement. The first section offers some general comments and observations, including basic principles of Web design that should be considered prior to a re-design of the KCVL *Tutorial* website. The second section presents an evaluation of the *Tutorial* as a Web-mediated curriculum. The third section provides a summary analysis of the responses to the user survey implemented at the *Tutorial* website. The fourth section addresses the issue of course management software as the sole delivery medium for the *KCVL Tutorial*. The final section presents a summary and conclusions.

Section I: General Comments and Observations

The site structure of the *KCVL Tutorial* website reflects both the purpose of its authors and the logic of the content domain. Yet, there is an inevitable tension between the purpose and the "packaging" of a Web-mediated tutorial. The *KCVL Tutorial* is both a curriculum and a website. The two functions are not necessarily compatible, even under the best design conditions. While the Web can be a powerful medium for delivering curriculum, this use of the medium presumes that the user group is only students. It also presumes that users will "play by the rules" of a curriculum, which are very different than the rules of the Web. The rules of the Web require that that the site's structure be defined in terms of what users want when they visit this site. Most users will not want a curriculum. They will want information…as quickly as possible. The instructional objectives of the site need to be transparent, and the site-design needs to reflect both the expectations of its users and the culture of the Web.

The KCVL *Tutorial* website welcomes a widely diverse group of users: (1) enrolled students who are required to complete the *Tutorial*, (2) those who need to acquire a specific information skill and (3) those who are curious or arrive by mistake. Those who are required to complete the *Tutorial* will typically do so only because it is required. This group of users is a "captive" audience; their use of the *Tutorial* website will occur independently of the site's functionality. On the other hand, those who need to acquire a specific information skill will scan the site to locate the information they need, at the time of need. This group is not a captive audience. Anything that forces this latter group of users to read non-essential text, search or navigate will deter them from persisting to the end of an instructional unit or a lesson (Levine, 1995). Those who are just curious or who arrive by error will defect quickly if they can't immediately assess the relevance and utility of the site—a phenomenon commonly known as "channel switching" behavior.

A website designed to provide a non-curricular learning opportunity for a highly heterogeneous user group presumes that learning happens at the time of need. A user's

need to know is a critical learning motivator, but writing for the Web needs to anticipate that the typical user is in a hurry (Barger, 1999b). If the purpose of a website is to promote learning, it is essential to present the information succinctly, especially if the authors are trying to hook a person who may be a reluctant learner. Ten minutes is a *long* visit to most sites (Nielsen, 2000). Site content needs to be accessible from every page. Text needs to be scannable.

Studies of user behavior on the Web reveal that Web users do not read; they scan text (Morkes & Nielsen,1997; Tarasewich, 2000). Less than 20 percent of site visitors read page content word by word (Nielsen, 1997). Scanning is the norm. Web users prefer text to be short and to the point. They prefer straightforward, factual information (Morkes & Nielsen). A conversational tone can frustrate these users.

In a study to determine the relative effects of rendering a website more concise, scannable and objective, Nielsen (1997) discovered that each of these effects resulted in improved usability (by 58%, 47% and 27% respectively), but when all three of these effects were applied, there was a 124% improvement (Nielsen). Morkes & Nielsen (1997) found that users of the *scannable version* performed tasks significantly faster, made significantly fewer task errors, had significantly better memory of site content, and reported significantly higher subjective satisfaction, as did users of the concise version. Further, users of the *concise version* took significantly less time to recall the site's structure.

Concise, scannable and objective content reduces the user's cognitive load, which results in faster, more efficient processing of information. Concise text contains less verbage to process; scannable text emphasizes key information; and objective text invites credibility and reduces the cognitive "noise" associated with non-neutral writing (Morkes & Nielsen, 1997).

Scannability is enhanced by using:

- Highlighted **keywords** (*hypertext links serve as one form of highlighting; typeface variations and color are others*)
- Meaningful **subheadings**
- Bulleted **lists**
- **One idea** per paragraph
- The **inverted paragraph** style, starting with the conclusion
- **Half the word count** or less than conventional writing (Nielsen, 1997).

Web users prefer the inverted pyramid writing style, which enables then to find the main point quickly, from the first line (Morkes & Nielsen, 1997). They want to get their information quickly and they want it without hype. Credibility is an important issue on the Web (Morkes & Nielsen).

In May 2000, the Poynter Institute, in collaboration with Stanford University, released an eyetracking study of how people read news on the Web, focusing on newspaper sites. The task of reading the news implies a willingness to process more words than the average Web task, which is directed at finding specific information. Test subjects surfed 211 unique news sites, viewing nearly 6,000 pages, over an elapsed time period of 40-hours (Outing, 2000). Users were first drawn to headlines, article summaries, and captions. It was more than three times as common for users to limit their reading to elements of the article as opposed to reading a full article. Even when reading a "full" article, users only read about 75% of the text. "In other words, the most common behavior is to hunt for information and be ruthless in ignoring details" (Nielsen, 2000).

Every person who visits a website (whether purposefully or accidentally) has either no interest, some interest, or a strong interest. The majority of site visitors will only have some interest (Wallace, 1999). This may be due to limited time, circumstance or only casual interest in the content domain. *The defining attribute of a good web site is that it gives visitors what they want and it acknowledges that not everyone is looking for the*

same information (Smith, 2000). Hence, a presentation model that caters to each level of reader interest will result in more satisfied visitors:

1. Web authors can help persons with no interest to avoid their web pages by assigning explicit titles. Since the page **title** is the first piece of information presented to a visitor, clear and meaningful titles will improve this first filter into a web site.
2. The **one sentence summary** will help visitors to determine their level of interest in a website more accurately. The one sentence summary should be the first sentence on the page.
3. Next, is the **one paragraph summary**, which captures a few seconds to influence the reader. This is the opportunity to sell site content, not the website. Plant the hook—the most important or interesting point you want to make—in the first paragraph, then use subsequent paragraphs to provide more detail (IBM, 1997).
4. Use headings to make **major points**. Headings should be informative and each major heading can be an anchor. It is important not to break a single "lesson" into a series of pages. Most readers will want to scan the information in its entire context, breaking it up makes this impossible. Further, every page download will risk losing the attention of the reader and disrupt the flow of the presentation.
5. **Minor points** detail the arguments behind a major point. Techniques for highlighting minor points include boldface font, topic sentences, and bulleted lists. It is important to ensure that minor points are useful independent of their surrounding text.
6. Finally, site visitors who have an intrinsic interest in the site content will read the entire presentation, assuming the writing style is concise and objective (Wallace, 1999).

It is also important that a site be navigable as well as scannable. User understanding of web site structure is a common usability problem. Site visitors need a sense of context. They need to know where they are and their location within an organization of information. Site design must also accommodate people who leave and return frequently.

It must help users reorient themselves (*by using explicit page titles as well as salient headings*) and provide excellent location tools (*such as a site map, site index, and a site search utility*) (Nielsen, 2000).

Not every visitor enters a site through the front door (Nielsen, 1999). Context is provided when every page of a hierarchically designed site contains the full path from the home page down to the parent of the current page. This "*bread crumb*" approach lets users travel back up the hierarchy to any level (Nielsen). Direction is provided when a site map and/or site index are part of the standard navigational tools on every page. A consistent and predictable set of navigational aids enables the user to make sense of a site's organization and makes the logic and order of a site visually explicit (Lynch & Horton, 2000).

Navigational aids must be prominent in the site design. Some suggest that they should be dominant, since only a fraction of an entire website (less than a page) is visible at any one time (Lynch & Horton, 2000). The dark blue navigational bar to the left of the screen at the *KCVL Tutorial* website is prominent. However, there should be only one navigational scheme—either top to bottom or left to right—but not both (Kleinberg, 1998). The location of the navigational aids at the top, right side of the *KCVL Tutorial* page (i.e. KCVU | KCVL | Self Test | Help) should be re-evaluated—the eye should only have to travel to the left side or the right side for a full view of navigation options—not both.

Web users don't scroll (Nielsen, 1996). They will typically stay or leave a site based on the first screen. They will defect when content is balkanized into numerous short pages. Breaking a document up into numerous short pages—the *water torture fallacy*—will cause readers to bail when the Net is slow (Barger, 1999a). There are several examples within the KCVL Tutorial website of short pages that can be combined into a single consolidated page. The recommended solution is to provide section headings with

anchor tags within the first screen, enabling the user to quickly scan and move among logical sections and ensuring that all major points can be accessible from the first screen.

Interaction is likewise crucial to an effective user interface design. Interaction does not need to replicate a traditional classroom experience. The non-linearity of the Web as an information medium implies interaction. Hyperlinks, which are the most essential ingredient of the Web, facilitate user interaction with content. The primary role of hyperlinks is to augment core information when the reader chooses.

The user is interacting with the medium whenever s/he makes a navigation choice, including the choice to leave or to stay. Interaction should emerge as a function of the content domain, not an artificial element of the site design. Online guidance by the CyberLibrarian, an interactive reference assistance form and a discussion Web are additional ways to enhance interactivity at the initiative of the user.

Section II: An Evaluation

The evaluation of the *KCVL Information Literacy Tutorial* is based, in part, on complexity and usability metrics, and on general tenets of Web design. Complexity metrics measure attributes specific to page layout and page design. The usability of a web site is related to its complexity. When a web site becomes too complex, its usability decreases (Tarasewich, 2000). Usability metrics measure user behaviors as they interact with a Web page as well as user satisfaction.

Complexity Metrics	
Page Layout	**Page Design**
Aspect ratio: ratio of height to width, which affects the amount of page scrolling. ▪ *Higher aspect ratios lead to more complexity*	**Number of graphics**. ▪ *More graphics on a page will increase complexity*
Percentage of white space. ▪ *Higher percentages of white space lead to less complicated (more readable) pages that are easier to scan & to navigate*	**Graphic size**. ▪ *Larger graphics will increase complexity.*
Horizontal & vertical balances: the distribution of material on a web page. ▪ *Balanced web pages are less complex*	**Number of words**. ▪ *A greater number of words on a page will increase complexity*
Horizontal symmetry. ▪ *Higher values for horizontal symmetry lead to lower complexity.*	**Number of items** (words plus graphics). ▪ *A larger number of items will lead to increased complexity.*
	Number of links. ▪ *More links lead to greater complexity*
	Number of pages. ▪ *More pages may make a website more complex*
	Average depth: the average number of pages from the homepage to a terminal page, with no more forward internal links. ▪ *As depth increases, it may be more difficult to locate information, tasks take longer and complexity increases*

(Tarasewich, 2000)

Usability Metrics
Time spent achieving an information goal.
Error rate that occurs while achieving an information goal.
Number of pages viewed while achieving an information goal.
Number of links activated while achieving an information goal.
Number of mouse clicks while achieving an information goal.
Distance scrolled, both vertically and horizontally, while achieving an information goal.
Distance the cursor moved while achieving an information goal.
Path the user took to achieve an information goal.
Time spent on each page while achieving an information goal.
Perceived usability of the web page or site. *The user's perception of how easy it is to use a web site or to perform a task is crucial.*

(Tarasewich, 2000)

Due to the nature of the KCVL project request, not all of the above metrics were applied in this evaluation. However, many of the observations cited in this section reflect a number of these measures, especially the complexity metrics. The perceived usability of the KCVL tutorial website (i.e. user satisfaction), as measured by the user survey administered between August 4 and September 8, is discussed in Section III of this report.

Kentucky Commonwealth Virtual Library Homepage http://www.kcvl.org

Observation:

The primary gateway to the KCVL Information Literacy *Tutorial* is a link on the homepage of the Kentucky Commonwealth Virtual Library. The *Tutorial* link is identified as: "*How to Use the Virtual Library.*" Although a mouseover script clarifies the purpose of this link (i.e. *click here to learn the basics about searching for information, conducting research, evaluating resources, and more*), the label is misleading. A *Tutorial* on how to access, retrieve and use information effectively and responsibly is different than how to use the KCVL.

Recommendation:

Use a naming convention that distinguishes between (a) instruction on how to be a skilled user of information and (b) instruction on how to use the KCVL catalog, databases and other KCVL resources. For example, *CyberCenter for Information Skills* may connote such a distinction.

The following are some thoughts to consider in deciding upon a different label:

- The word "*literacy*" may disengage the target audience (i.e. anyone with a minimum of a high school education) since general literacy is normally assumed of anyone who has successfully completed high school. It is likely to elicit the "*this isn't for me*" response.
- The word "*library*" evokes an image that is all too familiar to the average high school graduate and is likely to elicit the "*been there, done that*" response.

Consider using language that stresses skill-development and virtual learning, such as:

- CyberCenter for Information Skills
- Information Skills Center
- Information Skills for Cyber-Learners
- Information Skills Center for Cyber-Learners
- Etc.

Tutorial Homepage	http://www.kcvu.org/cvl/infolit.nsf

Observation:

The homepage of the KCVL *Tutorial* is both a welcome page and an introduction. It also defines the purpose and the intended outcomes of the KCVL *Tutorial*. The purpose of this website is to help the user develop information literacy, which is defined as the ability to:

- Recognize when information is needed
- Locate, evaluate, and use the needed information effectively.

The intended outcomes of this *Tutorial* are identified as the ability to:

- Formulate research questions
- Develop effective research strategies
- Identify appropriate information sources
- Search electronic databases
- Evaluate the information you find
- Use information responsibly and ethically

The introduction informs the user that the *Tutorial* consists of five units. The user is advised that they may either work through all units in one session, do them one at a time,

or in any order they choose. The user is invited to take a quiz at the conclusion of each unit, or at the end of the entire *Tutorial*, by clicking on the "Self Test" link in the upper right hand corner of each unit page.

If the user requires help, they are advised to contact the KCVL Help Desk, a hyperlink to an interactive form by which the user can ask a specific question of a KCVL librarian.

Recommendation:

The initial page of the KCVL Information Literacy *Tutorial* should: (1) set the tone for a hyper-mediated learning opportunity and (2) introduce the user to the contents of the *Tutorial* website. This page should be inviting and informative. It should make the contents of the *Tutorial* website explicit.

The purpose of the KCVL *Tutorial* is reflected in its content—**the purpose does not need to be stated**. The user only cares about his/her purpose. The user's purpose is selective: to learn something s/he doesn't already know. The contents list on the vertical navigation bar should enable the user to quickly identify a skill category that may be relevant and useful.

The intended outcomes of the *Tutorial* do not need to be stated if the contents reflect the learning objectives. Naming of the learning units and sub-units should convey the intended outcomes of the tutorial.

Learning on the Web is fundamentally non-sequential. It should be assumed that the user will pick and choose among learning options in order to acquire the skill set that s/he requires. Navigational aids should provide explicit cues to the context and organization of the site. Each lesson should be available in both HTML and PDF to facilitate printing.

The *KCVL Help Desk* provides a different kind of assistance than the *Help* option in the horizontal navigation bar. The labeling of these options is misleading. The first provides online reference assistance; the second is a generic help utility for EduPrise. Neither is specific to the *Tutorial*. **The "*Help Desk*" should be specific to the website.** Frequently Asked Questions (FAQs) are an additional aid. Reference assistance should be labeled as reference assistance.

A link to a **Credits page** should appear in the footer of each page, as part of the standard page template. Credibility is an important factor on the Web. It is also significant that the *KCVL Tutorial* website is the product of a collaborative effort by professional librarians representing multiple institutions of learning. Enrolled students may especially appreciate knowing that one or more librarians from their institution participated in this effort.

Unit 1: Web Basics

Welcome to Web Basics
Unit 1: 1 of 15
http://www.kcvu.org/cvl/infolit1.nsf/?OpenDatabase

Observation:

This introductory page, which articulates the learning outcomes for *Unit 1*, paraphrases the contents list for *Unit 2*. Yet, one has to select *Unit 1 Contents* in order to view a list of the contents—an unnecessary step. Further, one has to click on each category on the contents list in order to see the contents for that category. These are steps that can be avoided by making the full contents for each unit visible at all times on the vertical navigation bar to the left. A user-centered design flattens out the site structure whenever possible.

Recommendation:

Eliminate this page. The content of each learning unit, including each subordinate section or sub-unit, should be visible in the navigation bar that accompanies every page. Each content area should be a hyperlink to the corresponding learning module.

How the World Wide Web Works
The Basics You Will Need to Know
Unit 1: 2 of 15
http://www.kcvu.org/cvl/infolit1.nsf/ID/e9c996746702b5a08525678a00477f56

Observation:

This page has both a category heading (*How the World Wide Web Works*) and a topic heading (*The Basics You Will Need to Know*). This is unnecessary and potentially confusing.

The *Topic* layout contains organizational elements that contribute to visual clutter on the page. Assigning labels to the format structure (i.e. *Overview, Lesson*) is not necessary. While this structural style may result from using an EduPrise course template, it encumbers the effectiveness of the page design. It also presumes that the user is taking the *Tutorial* as a "course," which limits the audience and disenfranchises the casual site visitor seeking instructive information.

Content covers:
- Web browsers

- Web technology
- Web structure
- Web addresses

The delivery of content can be tighter when non-essential definitions are presented via hyperlink to the glossary or a pop-up box. The goal is to reduce non-essential text.

The presentation of content can be "chunked" in order to give the user an opportunity to scan content for relevance and utility. A guiding principle should be the user's need to know.

Recommendation:

Simplify the layout by using only one heading for this section.

Eliminate structural indicators (i.e. *Overview, Lesson*). **Headings should be content-driven.**

Edit content to eliminate definitions/descriptions of terms when this can be done with a hot-link or a pop-up box.

Re-format content in byte-size chunks that are clearly labeled for quick scanning.

Navigating the World Wide Web
How to Get from Place to Place on the Web
Unit 1: 3 of 15
http://www.kcvu.org/cvl/infolit1.nsf/ID/c94890317d0ec6b88525679100604786

Observation:

This is a single topic category with both a category heading (*Navigating the World Wide Web*) and a topic heading (*How to Get from Place to Place on the Web*). This is once again unnecessary as both headings convey the same meaning.

There is an overlap in content between this lesson and the preceding one. For example, the previous lesson discusses the role of "pages" on the Web, including page addresses.

The purpose of this lesson is to review the primary ways that Web users navigate the Web:
- Using navigation buttons
- Typing an address in the location box
- Following links

Each of these topics can be hot-linked to the associated instruction. Thus, the user can go directly to the instruction that is most useful to him/her without having to read and scroll the entire lesson.

Examples should be contextual. Integrate one excellent example within the body of the instructional narrative.

The authors should also reconsider the thematic value of the various examples used. This is an opportunity to introduce users to auxiliary information and/or educational resources on the Web, consistent with the purposes of the *Tutorial*. For example, citing the URL for CBS' Switchboard.com (http://www.switchboard.com/) introduces the user to a potentially useful Web tool.

The need for a separate practice exercise should be re-evaluated. This, too, can be context-sensitive—not because a template or pre-set structure requires it, but because the content justifies it.

Recommendation:

Use only one heading—the category heading—for this section: *Navigating the World Wide Web*.

Let the content determine the "breaks" between lessons in order to ensure that each learning module is independent and to mitigate overlapping content.

Establish the content elements of the lesson (e.g. *Using Navigation Buttons*) **and hyperlink them to the associated instruction.**

Integrate examples within the instructional narrative, selecting only one or two "best" examples.

Consider selecting examples that advance the learning outcomes of the *Tutorial*—information literacy skills.

Consider omitting practice exercises. Learning at the time of need presents context-rich opportunities for testing new skills.

Making the WWW Work For You
Tips and Tricks to Use the Web Better
Unit 1: 4 of 15
http://www.kcvu.org/cvl/infolit1.nsf/ID/70975ee844aee6618525679100605574

Observation:

This lesson is a single topic category. The category is *Making the WWW Work for You*; the topic is *Tips and Tricks to Use the Web Better*. The structure deviates from the previous lesson (omitting the overview and practice exercises) and the content is somewhat cursory. The primary focus is on bookmarks, although there is a brief mention of search engines and address domains.

Recommendation:

Use only one heading—the category heading—for this section.

Eliminate the structural indicators. Headings should be content driven.

Consider eliminating this lesson altogether by integrating instruction on using bookmarks within the lesson on *Navigating the World Wide Web*, moving the introduction to search engines to the lesson entitled *Introduction to Search Engines*, and expanding the discussion of Web addresses in the section on *How the World Wide Web Works* to include address domains.

Using Search Engines
Introduction to Using Search Engines
Unit 1: 5 of 15
http://www.kcvu.org/cvl/infolit1.nsf/ID/8c114e15a4f93a83852567ee005a6548

Observation:

This category, *Using Search Engines,* includes the following topics (or lessons):
- *Introduction to Using Search Engines* *(5 of 15)*
- *Beginning Techniques for Searching the Web* *(6 of 15)*
- *Tips for Using Search Engines* *(7 of 15)*
- *Advanced Search Engine Techniques* *(8 of 15)*
- *Capitalization* *(9 of 15)*
- *Using Truncation in Web Searching* *(10 of 15)*
- *Using the minus sign* *(11 of 15)*
- *Finding Images on the Web* *(12 of 15)*
- *Search Engine Results* *(13 of 15)*
- *Further Information on Search Engines* *(14 of 15)*

This *Introduction to Using Search Engines* includes a brief "overview" and a paragraph that describes search directories. No other distinctions among search engines are made in this section, e.g. metasearch tools, etc.

Recommendation:

Consider introducing the importance of developing a search strategy in this lesson, incorporating the content in *Beginning Techniques for Searching the Web*, which can be eliminated as a separate lesson, and embedding a link to Unit 2: *Basic Searching*.

Expand the overview of search engines to include the multiple categories of search utilities on the Web, including metasearch tools.

Combine the following topics into one lesson, e.g. *Using the Language of Search Engines***.**

- *Tips for Using Search Engines* *(7 of 15)*
- *Advanced Search Engine Techniques* *(8 of 15)*
- *Capitalization* *(9 of 15)*
- *Using Truncation in Web Searching* *(10 of 15)*
- *Using the minus sign* *(11 of 15)*

Using Search Engines
Beginning Techniques for Searching the Web
Unit 1: 6 of 15
http://www.kcvu.org/cvl/infolit1.nsf/ID/9c96de8bf6f4a4f1852568bf006b292e

Observation:

This lesson briefly introduces the notion of search strategies:

- Defining the topic, and
- Combining the words into a search statement

It also introduces the practice of using natural language when searching the Web.

Recommendation:

Eliminate this lesson. Instead, introduce the importance of developing a research strategy in the lesson entitled: *Introduction to Using Search Engines.*

Embed a link to Unit 2: Basic Searching, rather than replicating content in Unit 2.

Using Search Engines
Tips for Using Search Engines
Unit 1: 7 of 15
http://www.kcvu.org/cvl/infolit1.nsf/ID/a83f4a97c8a989868525686300707a7f

Observation:

This lesson introduces the two major search techniques that are used with most search engines:

- Use of the plus (+) sign
- Enclosing phrases within quotation marks

The lesson title does not reflect the content. A more explicit heading would be: *Using the (+) sign and ("") marks*.

The structural indicators are once again unnecessary and, in this lesson, somewhat confusing. The "example" appears to precede the instructional content.

Recommendation:

Incorporate this topic into a single lesson, e.g. *Using Search Syntax***.**

Examples should be integrated into the instructional narrative to provide a cohesive presentation.

Using Search Engines
Advanced Search Engine Techniques
Unit 1: 8 of 15
http://www.kcvu.org/cvl/infolit1.nsf/ID/97fbe92e6855dda885256865004d9038

Observation:

The overview of this lesson describes "advanced" searching :

- Using the Boolean "and"
- Does case matter?
- Using the minus (-) sign
- Truncation
- Finding images on the Web

The heading for this lesson is misleading and non-explicit.

Although the "overview" suggests that case, the minus (-) sign, truncation and finding images on the Web will be covered in this lesson, only the Boolean operator "and" is covered. This is the first use of the term "Boolean" and it is not defined until later in the instructional narrative.

The examples in this lesson appear to be somewhat random. One of the pitfalls in using examples that lack contextual value is that it tends to trivialize the learning objective.

Recommendation:

Incorporate this topic into a single lesson, e.g. *Using Search Syntax***.**

Consider selecting examples that advance the learning outcomes of the *Tutorial* (e.g. *journal* AND *full-text*).

Using Search Engines
Capitalization
Unit 1: 9 of 15
http://www.kcvu.org/cvl/infolit1.nsf/ID/b036482b5c66b24585256865004d9039

Observation:

This lesson introduces the notion that some search engines are case sensitive. Examples are plentiful.

Recommendation:

Incorporate this topic into a single lesson, e.g. *Using Search Syntax***.**

Use examples judiciously, only when a concept is difficult to comprehend in the absence of a visual example. Once again, **examples are most effective when they are integrated within the instructional narrative**.

Using Search Engines
Using Truncation in Web Searching
Unit 1: 10 of 15
http://www.kcvu.org/cvl/infolit1.nsf/ID/813fffb957383922852568bf005b44f8

Observation:

This is a focused lesson on the concept of "truncation." Truncation is not defined in this lesson.

Recommendation:

Incorporate this topic into a single lesson, e.g. *Using Search Syntax***.**

Consider selecting examples that advance the learning outcomes of the lesson, unit or *Tutorial*.

Using Search Engines
Using the Minus Sign

Unit 1: 11 of 15
http://www.kcvu.org/cvl/infolit1.nsf/ID/12b28f229126c9b685256866007d8725

Observation:

The concept of negative selection, the minus (-) sign, is introduced in this lesson. The instructional narrative is extremely brief. There is no mention of the corollary concept of "NOT." There is not hot link to the lesson on using the Boolean "NOT" operator in *Advanced Searching*.

One of the pitfalls in using examples that lack contextual value is that it tends to trivialize the learning objective and disaffect the user for whom the sample topic is of no interest.

Recommendation:

Incorporate this topic into a single lesson, e.g. *Searching the Web***.**

Consider selecting examples that advance the learning outcomes of the *Tutorial*.

Using Search Engines
Finding Images on the Web
Unit 1: 12 of 15
http://www.kcvu.org/cvl/infolit1.nsf/ID/0fa572b04cc0ef3a852568c00048ad9d

Observation:

Search engines that locate images on the Web, based on a textual search, are powerful tools. This lesson alerts the user to the opportunity for finding images on the Web and provides an excellent example. The hotlink to Alta Vista, with the attendant instructions on how to return to the *Tutorial*, is also very effective.

No other search engines that retrieve image searches are mentioned. There is also no mention of public art versus private art on the Web.

The picture of the opossum did not load in either Netscape or Internet Explorer.

Recommendation:

Consider including examples of other search engines that search for images, e.g. http://www.hotbot.com.

Consider addressing the issue of intellectual property…just because an image can be located on the Web does not mean that it is public domain and can be used without

permission. A **hotlink to the corresponding lesson within Unit 5** is also appropriate in this context.

Using Search Engines
Search Engine Results
Unit 1: 13 of 15
http://www.kcvu.org/cvl/infolit1.nsf/ID/93627d3d45af0ea485256865004d9035

Observation:

The purpose of this lesson is to introduce the user to the variety of results, both in format and in value, which they may expect when using different search engines.

The ordering of instructional content introduces the effect of "advertising" before the discussion of "results," "number of results," and "ranking," which tends to diffuse the focus in this lesson on the results per sé.

The definition and explanation of "hotlinks" could be more useful to the user if it were presented within the context of *Navigating the World Wide Web*.

Once again, the structural indicators (i.e. "Overview" and "Example") are not helpful in this lesson.

Recommendation:

Discuss the nature and variety of search results within the dual context of (1) format and (2) quality. What are the format features that enhance or impede search results (e.g. advertising)? What are the quality features that contribute to a productive search (e.g. relevance ranking)?

Relocate the discussion of "hotlinks" to the lesson on *Navigating the World Wide Web*.

Eliminate structural indicators.

Using Search Engines
Further Information on Search Engines
Unit 1: 14 of 15
http://www.kcvu.org/cvl/infolit1.nsf/ID/a717f5ea7a9e687285256865004d9036

Observation:

The references to further information on search engines presented in this lesson are extremely valuable resources. They are most likely to contribute to the learning outcomes of this *Tutorial* within the lessons that discuss the related topics.

This lesson is another example of an inconsistent yet marginal use of structural indicators. In this lesson, the only indicator used is that of "Lesson," which may be regarded as stating the obvious. Yet the font size, color and boldness make it a dominant element of the page—more dominant than the topic heading.

Recommendation:

Consider doing "analytics" of these websites, with view to providing users with **a comprehensive table of excellent sources** that explicate the various aspects and dimensions of searching the Web, e.g. http://searchenginewatch.com/facts/index.html, as well as corresponding hotlinks throughout the KCVL *Tutorial*. This table could be also accessible from the standard navigation bar on the left of the screen.

Eliminate this lesson and **embed references to excellent resources within the context (lessons) in which the subject matter is discussed**.

Connecting to a Search Engine
Connecting to a Search Engine
Unit 1: 15 of 15
http://www.kcvu.org/cvl/infolit1.nsf/ID/1c12f98fc157817785256865004d9037

Observation:

This lesson introduces two ways of connecting to a search engine:
- Using the search utility that ships with each of the major browsers (Netscape and Internet Explorer)
- Clicking on one of the URLs provided in this lesson.

This lesson provides an excellent context for embedding a link to search engine reviews, e.g. http://searchenginewatch.com/reports/reviewchart.html, which may expose the user to the comparative strengths of various search engines.

It also provides an excellent context for directing users to search portals, e.g. http://nightfall.simplenet.com/SearchEngine/.

Recommendation:

A lesson on connecting to a search engine should precede the lessons on using search engines. **Consider re-sequencing this lesson to precede *Beginning Techniques for Searching the Web.***

Use this lesson topic as an opportunity to help users develop critical selection skills.

Omit the quiz.

Unit 1	Summary of Recommendations

- Consider re-labeling the *KCVL Tutorial* website, selecting a name that clearly identifies its function (in contrast with "How to Use the Virtual Library").

- The *Tutorial* homepage should make the full contents of the website immediately accessible.

- Navigational aids should provide explicit cues to the context and organization of the site.

- The contents list on the vertical navigation bar should enable the user to quickly identify a skill category that may be relevant and useful.

- The intended outcomes of the *Tutorial* do not need to be stated.

- Each lesson should be available in both HTML and PDF to facilitate printing.

- The "*Help Desk"* in this *Tutorial* should be designed to provide problem-solving assistance to the user of this website. Frequently Asked Questions (FAQs) are an additional aid. Reference assistance should be labeled as reference assistance.

- A link to a Credits page should appear in the footer of each page, as part of the standard page template.

- Eliminate the "*Welcome to Web Basics"* page, which lists the outcomes for Unit 1. The content of each learning unit, including each subordinate section or sub-unit, should be visible in the navigation bar that accompanies every page.

- Simplify the layout by using only one heading for every lesson (instead of *How the World Wide Web Works* and *The Basics You Will Need to Know*).

- Eliminate structural indicators (i.e. *Overview, Lesson*). Headings should be content-driven.

- Edit content to eliminate embedded definitions/descriptions of terms when this can be done with a hot-link or a pop-up box.

- Re-format content in byte-size chunks that are clearly labeled for quick scanning.

- Let the content determine the "breaks" between lessons in order to ensure that each lesson is independent.

- Integrate examples within the instructional narrative, selecting only one or two "best" examples.

- Consider selecting examples that advance the learning outcomes of the *Tutorial*—information literacy skills.

- Consider omitting practice exercises. Learning at the time of need presents context-rich opportunities for testing new skills.

- Consider eliminating Lesson 4: *Making the WWW Work for You* by integrating instruction on using bookmarks within the lesson on *Navigating the World Wide Web*, moving the introduction to search engines to the lesson entitled *Introduction to Search Engines*, and expanding the discussion of Web addresses in the section on *How the World Wide Web Works* to include address domains.

- Expand the overview of search engines to include the multiple categories of search utilities on the Web, including metasearch tools.

- Combine the following topics into one lesson, e.g. *The Language of Search Engines*:
  - *Tips for Using Search Engines (7 of 15)*
  - *Advanced Search Engine Techniques (8 of 15)*
  - *Capitalization (9 of 15)*
  - *Using Truncation in Web Searching (10 of 15)*
  - *Using the minus sign (11 of 15)*

- Eliminate Lesson 6: *Using Search Engines*. Instead, introduce the importance of developing a research strategy in the lesson entitled: *Introduction to Using Search Engines* (Lesson 5).

- Strive to avoid replicating content by embedding links to associated content in subsequent or preceding lessons.

- Integrate examples into the instructional narrative to provide a cohesive presentation.

- Use examples judiciously, only when a concept is difficult to comprehend in the absence of a visual example.

- Consider including examples of other search engines that search for images, e.g. http://www.hotbot.com.

- Consider addressing the issue of intellectual property within this context. A hotlink to the corresponding lesson within Unit 5 is appropriate.

- Discuss the nature and variety of search results within the dual context of (1) format and (2) quality.

- Relocate the discussion of "hotlinks" to the lesson on *Navigating the World Wide Web*.

- Consider doing "analytics" of referenced websites, with view to providing users with a table of excellent sources. The table at http://searchenginewatch.com/facts/index.html is an example.

- Eliminate Lesson 13: *Further Information on Search Engines* and embed references to excellent resources within the lessons in which the subject matter is discussed.

- A lesson on connecting to a search engine should precede the lessons on using search engines. Consider re-sequencing Lesson 15: *Connecting to a Search Engine* to precede Lesson 6: *Beginning Techniques for Searching the Web.*

- Use the topic in Lesson 15: *Connecting to a Search Engine* as an opportunity to help users develop critical selection skills.

- Omit quizzes in individual lessons.

Unit 2: Basic Searching

Welcome to Basic Searching Techniques
Unit 2: 1 of 17
http://www.kcvu.org/cvl/infolit2.nsf

Observation:

This introductory page, which articulates the learning outcomes for *Unit 2*, paraphrases the contents list for *Unit 2*. One has to select *Unit 2 Contents* on the sidebar in order to view a list of the contents—an unnecessary step. Further, one has to click on each category on the contents list to see the contents for that category. These are steps that can be avoided by making the full contents for each unit visible at all times on the vertical navigation bar to the left of the screen . A user-centered design flattens out the site structure whenever possible.

Recommendation:

Eliminate this page. *Unit 2* content, including each subordinate lesson, should be visible in the navigation bar that accompanies every page within this unit. Each sub-unit should be a hyperlink to the corresponding learning module.

How to Formulate a Research Strategy
Developing a Research Strategy
Unit 2: 2 of 17
http://www.kcvu.org/cvl/infolit2.nsf/ID/6EE68648A68B87ED85256758005A6895

Observation:

This lesson defines a "research strategy" and presents an approach to the development of a research strategy. Content is limited and does not merit a separate lesson, unless it is combined with other content.

Recommendation:

Combine the content in this lesson with the content in the following three lessons, using anchor tags to move among subtopics. The new, combined lesson could retain the name of this lesson.

Writing a Thesis Statement :
Thesis Statement Development
Unit 2: 3 of 17

http://www.kcvu.org/cvl/infolit2.nsf/ID/70CCD84B952BA1A685256758005B37A8

Observation:

The category entitled *Writing a Thesis Statement* includes two separate lessons on:
- *Thesis Statement Development*
- *Developing a Topic*

This lesson on *Thesis Statement Development* provides an example of a thesis statement. It does not define a thesis statement nor review alternative approaches to developing a thesis statement. It implies that "basic searching" necessitates a thesis statement.

Recommendation:

Expand the concept of a thesis statement to include the collateral concept of the "central question." Every search transaction involves a central question; only compositions require a thesis statement.

Embed this lesson within the new lesson (*Developing a Research Strategy*) that addresses all four elements:
- Developing a topic
- Determining the central question
- Identifying keywords/main ideas
- Broadening or narrowing the topic

Writing a Thesis Statement :
Developing a Topic
Unit 2: 4 of 17
http://www.kcvu.org/cvl/infolit2.nsf/ID/824020FC764F77218525676F0054CEC0

Observation:

This lesson discusses the contrasting scenarios of (1) working with an assigned topic and (2) selecting a topic. It also suggests that a good way to develop a topic is to write it as a statement or as a question. The subject matter of this lesson suggests that it should precede the previous lesson on thesis statement development.

The tone is a bit more conversational than in preceding lessons. The pitfall in adopting a conversational tone is the risk of alienating one or more audiences. Who is the audience here? …the eighteen-year old student? …the adult learner returning to school for retraining? …the senior citizen who is trying to master the Web? Is the tone of this lesson audience-neutral?

Recommendation:

Embed this lesson within the new lesson (*Developing a Research Strategy*) that addresses all four elements:

- Developing a topic
- Determining the central question
- Identifying keywords/main ideas
- Broadening or narrowing the topic

Adopt a standard style of delivery throughout the KCVL Tutorial.

Selecting Keywords
Unit 2: 5 of 17
http://www.kcvu.org/cvl/infolit2.nsf/ID/D2EB29E9800D40AA852567620054C98F

Observation:

This lesson describes a "keyword" and dissects a thesis statement by isolating the essential terms. It demonstrates the multiple combinations of "key" terms that can emerge from a thesis statement via a synonym matrix. While the synonym matrix is an effective use of a visual aid, two of the three key terms that build the synonym matrix are phrases. It is important to acknowledge that key concepts are frequently phrases, which may be more difficult to represent with appropriate synonyms. For example, "*gun regulation*" may be a more appropriate synonym for the phrase "*gun control*" than the single word of "*firearms*." Similarly, "*crime statistics*" may be a more appropriate synonymous phrase for "*crime rate*" than the single word of "*murder*."

The synonym matrix does not print.

This lesson also embeds a link to Merriam-Webster's online thesaurus/dictionary for finding synonyms.

Recommendation:

Embed this lesson within the new lesson (*Developing a Research Strategy*) that addresses all four elements:

- Developing a topic
- Determining the central question
- Identifying keywords/main ideas
- Broadening or narrowing the topic

Distinguish between keyphrases and keywords, using phrases as synonyms for corresponding phrases.

Omit the "Practice" exercise. The cyberlearner wants what's real and relevant. Consider including the following as a backup to the online thesaurus: *Need Help? E-mail the cyberlibrarian.*

Subject and Keyword Searching:
Subject vs. Keyword
Unit 2: 6 of 17
http://www.kcvu.org/cvl/infolit2.nsf/ID/748804855236C9A48525676200557814

Observation:

The category entitled *Subject and Keyword Searching* includes two lessons:
- *Subject vs. Keyword*
- *Controlled Vocabulary*

This lesson, entitled *Subject vs. Keyword*, explains the distinction between subject terms and keywords. It doesn't explain why this distinction is even relevant. In the absence of a discussion of relevance, this distinction will only seem esoteric to most users.

Recommendation:

Establish the relevance for making a distinction between subject terms and keywords. For example, is this distinction relevant when using search engines on the Web and, if so, when? Is it relevant when using library and commercial databases? If so, when…and why?

Combine the two lessons on *Subject and Keyword Searching*.

Subject and Keyword Searching:
Controlled Vocabulary
Unit 2: 7 of 17
http://www.kcvu.org/cvl/infolit2.nsf/ID/f852cf3a2ab266ee852567d0005fdc35

Observation:

This lesson introduces the concept of controlled vocabulary and provides a "key" to using the Library of Congress Subject Headings (LCSH).

Recommendation:

Combine the two lessons on *Subject and Keyword Searching*.

Consider revising this lesson with a virtual audience in mind. Is it likely that the virtual user will have access to the LCSH? If not, perhaps it is less important for him/her to know how to decode the LCSH than to know when and how controlled vocabulary may affect search results.

Boolean Logic:
Boolean "OR"
Unit 2: 8 of 17
http://www.kcvu.org/cvl/infolit2.nsf/ID/5664D9BF0D8614E08525676200566AB4

Observation:

The category entitled *Boolean Logic* includes two lessons:
- *Boolean "OR"*
- *Boolean "AND"*

This lesson presents a straightforward explanation of the Boolean "OR."

Recommendation:

Combine this lesson and the following lesson into a single lesson on *Boolean Operators.*

Omit the "Practice" exercise.

Consider selecting examples that advance the learning outcomes of the Tutorial, e.g. periodicals OR journals.

Boolean Logic:
Boolean "AND"
Unit 2: 9 of 17
http://www.kcvu.org/cvl/infolit2.nsf/ID/5EE9240C04A4768E8525676200568218

Observation:

This lesson discusses the Boolean operator "and." It also includes an animated graphic, which illustrates how a search based on an "and" query will produce a subset of the two words combined. This is an effective use of a .gif image.

Recommendation:

Combine this lesson and the preceding lesson into a single lesson on Boolean operators.

Consider selecting examples that advance the learning outcomes of the Tutorial, e.g. journals AND full-text.

Appropriate Information Sources:
Information Sources
Unit 2: 10 of 17
http://www.kcvu.org/cvl/infolit2.nsf/ID/EA2AEA19452E6BE7852567620056BCD3

Observation:

The category entitled *Appropriate Information Sources* includes lessons on:
- *Information Sources*
- *Books*
- *Periodicals*
- *Internet*

The first lesson, on *Information Sources*, presents a table that matches the type of information needed with the "best source(s)" of information available. These include books, periodicals and/or Internet. The purpose of this lesson is to introduce the user to the concept that no single source of information is appropriate for all information needs.

Recommendation:

Consider an alternative approach to this topic presentation. Rather than risking an erosion of credibility by definitively categorizing the "best sources" for specific types of information, underscore the important attributes of each information source (i.e. book, periodical, and the Internet). For example, periodicals may be described as particularly appropriate for current, specialized and/or scholarly information, depending upon the purpose of the publication. This description does not preclude the viability of any other information source, such as the Internet, as a venue for current, specialized and/or scholarly information, but it specifically associates these attributes with periodicals.

Appropriate Information Sources:
Books
Unit 2: 11 of 17
http://www.kcvu.org/cvl/infolit2.nsf/ID/F2A7B4BA569B69448525676200586384

Observation:

This lesson discusses the purposes for which books are the most appropriate information source:
- Historical topics

- Background reading
- Biographies
- Primary Source of Information

The instructional narrative is quite clear, but neither "biographies" nor "primary source" of information are defined. A .gif image of a book with pages turning accents this lesson.

Recommendation:

Establish natural breaks in the text in order to visually punctuate separate statements. One paragraph presents too much text at once.

Both "biographies" and "primary source" of information should be accompanied by pop-up definitions.

Appropriate Information Sources:
Periodicals
Unit 2: 12 of 17
http://www.kcvu.org/cvl/infolit2.nsf/ID/1CB6E672563AA9228525676200588821C

Observation:

This lesson defines the term "periodicals," which encompasses newspapers, magazines and journals. The term "journal" is hotlinked to an e-journal (*The Electronic Journal of Sociology*) and the term "magazine" is hotlinked to the website for *Better Homes and Gardens*. It is assumed that the audience is comprised of students.

The lesson is accompanied by a table that delineates the "differences between journals and magazines." It concludes with a practice exercise.

Recommendation:

Include some discussion of electronic periodicals and how the attributes of e-periodicals are both similar to and different than print periodicals.

Consider how the "differences" between journals and magazines pertain to e-journals and e-zines. Format-specific characteristics (e.g. "plain cover" vs. "flashy cover") are not germane to digital editions. The nature of advertisements may also differ.

The first word of each statement in the table should be capitalized.

Omit the "Practice" exercise.

Appropriate Information Sources:
Internet
Unit 2: 13 of 17
http://www.kcvu.org/cvl/infolit2.nsf/ID/39AB864076DFE53685256762005897EA

Observation:

This lesson points out that the Internet is a self-publishing medium and, as such, is an unreliable source of information, both "good" and "bad". It also explains how to analyze a website address.

Recommendation:

Revisit the purpose of this lesson. The Internet can be a valuable source of information. Its attributes as an "appropriate information source" should be explicated further.

Analyzing a website address should be presented in Unit 1. If the authors' intent is to suggest that a website domain is an indicator of information "quality," then that can be mentioned as one of the attributes of the Internet as an appropriate information source. However, caution should be exercised in associating a presumption of value with a website domain.

Omit the "Practice" exercise.

Documenting Research Sources:
Citing Research Sources
Unit 2: 14 of 17
http://www.kcvu.org/cvl/infolit2.nsf/ID/B000291B7843236A852567620058E60F

Observation:

The category entitled *Documenting Research Sources* includes topics (or lessons) on:
- *Citing Research Sources*
- *How to Cite a Book*
- *How to Cite a Periodical Article*
- *How to Cite an Internet Source*

The first lesson, *Citing Research Sources*, introduces the significance and language of bibliographic citations. It is comprised of two brief paragraphs.

Recommendation:

Combine all four lessons into a single lesson, using anchor tags to navigate among subtopics.

Documenting Research Sources:
How to Cite a Book
Unit 2: 15 of 17
http://www.kcvu.org/cvl/infolit2.nsf/ID/F8BCE1DDD0B8EFE18525676E00727853

Observation:
The second lesson in this series, *How to Cite a Book*, identifies the essential elements of a book citation as well as the more prominent style guides. The concluding paragraph is redundant of the first paragraph.

Recommendation:

Combine all four lessons into a single lesson, using anchor tags to navigate among subtopics.

Consider presenting the elements of a typical book publication in a tabular format.

Provide an example of how the same book will be cited differently according to the three styles guides mentioned.

Eliminate redundancy.

Documenting Research Sources:
How to Cite a Periodical Article
Unit 2: 16 of 17
http://www.kcvu.org/cvl/infolit2.nsf/ID/9A3AC2CD5A46C8C38525676E00728D4F

Observation:

This lesson is comprised of a single paragraph, identifying the essential elements of a periodical citation.

Recommendation:

Combine all four lessons into a single lesson, using anchor tags to navigate among subtopics.

Consider presenting the elements of a typical periodical publication in a tabular format.

Provide an example of how the same periodical will be cited differently according to different style manuals, e.g. APA, MLA and Turabian.

Documenting Research Sources:
How to Cite an Internet Source
Unit 2: 17 of 17
http://www.kcvu.org/cvl/infolit2.nsf/ID/7E60A2FB2CADD5E88525676E00729FF7

Observation:

This lesson discusses the wide variability of website formats, thus affecting citation formats. It provides no examples of electronic citations.

Recommendation:

Combine all four lessons into a single lesson, using anchor tags to navigate among subtopics.

Consider presenting the citation elements of a typical website in a tabular format.

Examples of website citations are especially important since this is new territory for many people. **Provide an example of how the same website will be cited differently according to different authorities.**

Unit 2	Summary of Recommendations

- Eliminate the "*Welcome to Basic Searching Techniques*" page, which lists the outcomes for Unit 2. The content of each learning unit, including each subordinate lesson, should be visible in the navigation bar that accompanies every page.

- Combine the content in Lesson 2 with the content in Lessons 3, 4, and 5, using anchor tags to move among subtopics. The new, combined lesson could retain the name of this lesson, *Developing a Research Strategy*, and include the following elements:
  - Developing a topic
  - Determining the central question
  - Identifying keywords/main ideas
  - Broadening or narrowing the topic

- Expand the concept of a thesis statement to include the collateral concept of the "central question." Every search transaction involves a central question; only compositions require a thesis statement.

- Adopt a standard style of delivery throughout the KCVL Tutorial.

- Distinguish between "key phrases" and keywords, using phrases as synonyms for corresponding phrases.

- Omit "Practice" exercises. The cyberlearner wants what's real and relevant.

- Establish the relevance for making a distinction between subject terms and keywords. For example, is this distinction relevant when using search engines on the Web and, if so, when? Is it relevant when using library and commercial databases? If so, when…and why?

- Combine the two lessons on *Subject and Keyword Searching* (Lessons 6 & 7).

- Consider revising Lesson 7 with a virtual audience in mind. Is it likely that the virtual user will have access to the LCSH? If not, perhaps it is less important for him/her to know how to decode the LCSH than to know when and how controlled vocabulary may affect search results.

- Combine Lessons 8 and 9 into a single lesson on *Boolean Operators.*

- Consider selecting examples that advance the learning outcomes of the Tutorial, e.g. periodicals OR journals. journals AND full-text, etc.

- Consider an alternative approach to the topic presentation in Lesson 10. Rather than risking an erosion of credibility by definitively categorizing the "best sources" for specific types of information, underscore the important attributes of each information source (i.e. book, periodical, and the Internet). For example, periodicals may be described as particularly appropriate for current, specialized and/or scholarly information, depending upon the purpose of the publication. This description does not preclude the viability of any other information source, such as the Internet, as a venue for current, specialized and/or scholarly information, but it specifically associates these attributes with periodicals.

- Establish natural breaks in the text in order to visually punctuate separate statements. Some paragraphs present too much text at once.

- The terms "biographies" and "primary source" should be accompanied by pop-up definitions in Lesson 11.

- Include some discussion of electronic periodicals and how the attributes of e-periodicals are both similar to and different than print periodicals in Lesson 12.

- Consider how the "differences" between journals and magazines pertain to e-journals and e-zines (Lesson 12). Format-specific characteristics (e.g. "plain cover" vs. "flashy cover") are not germane to digital editions. The nature of advertisements may also differ.

- Capitalize the first word of each statement in a table format and in bulleted lists.

- Revisit the purpose of Lesson 13. The Internet can be a valuable source of information. Its attributes as an "appropriate information source" should be explicated further.

- Analyzing a website address should be presented in Unit 1.

- Combine Lessons 14, 15, 16, and 17 into a single lesson on *Documenting Research Sources*, using anchor tags to navigate among subtopics.

- Consider presenting the elements of a typical book publication in a tabular format.

- Provide an example of how the same book will be cited differently according to the three style guides mentioned.

- Consider presenting the elements of a typical periodical publication in a tabular format.

- Provide an example of how the same periodical will be cited differently according to different style manuals, e.g. APA, MLA and Turabian.

- Consider presenting the citation elements of a typical website in a tabular format.

- Examples of website citations are especially important since this is new territory for many people. Provide an example of how the same website will be cited differently according to different authorities.

Unit 3: Advanced Searching

Welcome to Advanced Searching Techniques
Unit 3: 1 of 10
http://www.kcvu.org/cvl/infolit3.nsf

Observation:

This welcome page introduces the three learning categories in this unit:
- Advanced Boolean techniques
- Limiting
- Truncation

No definitions are provided nor hyperlinks to the corresponding lessons. The contents of *Unit 3* replicate the same information as provided on this page.

Recommendation:

Eliminate this page. *Unit 3* content, including each subordinate lesson, should be visible in the navigation bar that accompanies every page within this unit. Each sub-unit should be a hyperlink to the corresponding learning module.

Advanced Boolean Techniques:
Advanced Boolean Searching
Unit 3: 2 of 10
http://www.kcvu.org/cvl/infolit3.nsf/bb61da20f79efdd08525662c0051a932/67ae3b27e8bdfa0a852567a7006a938f?OpenDocument

Observation:

This lesson defines "Boolean operators" and provides a rationale for using Boolean operators when constructing a search statement.

The text occurring in the section labeled "*Lesson*" is partially repetitive of the text that follows the "*Overview*." It introduces the notion of "advanced Boolean techniques" and anchors it to an earlier learning module on "basic searching." Once again, the structural indicators (i.e. *Overview, Lesson*) detract from the presentation.

This lesson presents an example that uses a truncation symbol (?) that isn't discussed until later in this unit.

Recommendation:

Eliminate the structural indicators. The instructional narrative should flow without the constraints of artificial headings.

Eliminate redundancy.

Eliminate the truncation symbol in the example used for this lesson.

Combine all four lessons on Boolean searching into a single lesson on *Advanced Boolean Techniques*.

Advanced Boolean Techniques:
Boolean OR
Unit 3: 3 of 10
http://www.kcvu.org/cvl/infolit3.nsf/ID/36EA77820A603246852567B600520EA8

Observation:

This lesson is limited to the use of the Boolean operator "OR." It presents an example that uses a truncation symbol (?) that isn't discussed until later in this unit.

This lesson is essentially repetitive of the lesson in Unit 2 entitled "*Boolean OR*." It presents a concept that can be more effectively presented when accompanied by the contrasting concepts of "AND" and "NOT." It can also be more effectively presented when accompanied by a visual rendering of what many learners find to be a difficult-to-grasp, abstract concept.

Recommendation:

Combine all four lessons on Boolean searching into a single lesson on *Advanced Boolean Techniques*.

Consider using a Venn diagram to illustrate the relationship of the Boolean operator with the corresponding word set.

Eliminate the truncation symbol in the example used for this lesson.

Consider selecting examples that advance the learning outcomes of the Tutorial, e.g. periodicals OR journals.

Advanced Boolean Techniques:
Boolean NOT
Unit 3: 4 of 10
http://www.kcvu.org/cvl/infolit3.nsf/ae990037d73445768525662d004455be/55bdb8b714adacb7852567b70047c755?OpenDocument

Observation:

This lesson is limited to the use of the Boolean operator "NOT." It presents an example that uses a truncation symbol (?) that isn't discussed until later in this unit.

This concept can be more effectively presented when accompanied by the contrasting concepts of "AND" and "OR" and when accompanied by a graphic rendering of the relationship that is occurring between a set of words.

Recommendation:

Combine all four lessons on Boolean searching into a single lesson on *Advanced Boolean Techniques*.

Consider using a Venn diagram to illustrate the relationship of the Boolean operator with the corresponding word set.

Eliminate the truncation symbol in the example used for this lesson.

Consider selecting examples that advance the learning outcomes of the Tutorial, e.g. journals NOT e-journals.

Omit the "Practice" exercise.

Advanced Boolean Techniques:
Nesting
Unit 3: 5 of 10
http://www.kcvu.org/cvl/infolit3.nsf/ID/E16009C2AEBAC324852567B7004A3F6A

Observation:

This lesson introduces a more complex use of basic searching techniques—combining two or more search strings in a single search statement. It once again presents examples that use a truncation symbol (?) that isn't discussed until later in this unit. The examples repeat the use of the same word sets used in previous lessons, which runs the risk of marginalizing the value of an example due to overuse. No graphical example accompanies this lesson.

Recommendation:

Combine all four lessons on Boolean searching into a single lesson on *Advanced Boolean Techniques*.

Eliminate the truncation symbol in all examples in this lesson.

Consider using a Venn diagram to illustrate the relationship of the Boolean operator with the corresponding word set.

Consider selecting examples that advance the learning outcomes of the Tutorial.

Limiting:
Limiting Search Results
Unit 3: 6 of 10
http://www.kcvu.org/cvl/infolit3.nsf/ID/b9bce682682eb0a2852567670062ee02

Observation:

This module serves to introduce the concept of limiting a search to a respective data field, but defers instructional content to subsequent modules. It needs to present a "context" for the learning objective by clarifying whether this technique is either unique to or more typical of searching commercial databases vis-à-vis the Web.

Recommendation:

Combine and condense all lessons on limiting (6 through 9) **into a single lesson.**

Provide an instructional context that answers the questions: "why do I need to know this?" or "how is this useful to me?"

Limiting:
Limiting by Language
Unit 3: 7 of 10
http://www.kcvu.org/cvl/infolit3.nsf/ID/32E73F68575D2302852567B700573F00

Observation:

This lesson provides an example of one type of search limit: language. The variability in syntax among databases is described, leaving uncertainty as to when and how this kind of search (i.e. using field parameters) should be deployed. The user needs some guidance as to when the use of a field limit justifies the effort. The example provided may not be the best example, since the vast majority of searches using the English language will produce English language results. Further, if this search technique is more relevant to bibliographic database searches than to Web-based searches, this distinction should be clear.

Recommendation:

Combine and condense all lessons on limiting (6 through 9) **into a single lesson.**

Be clear about when this kind of search technique is <u>needed</u> (just because it can be done does not make it relevant).

Beware that cautionary statements about the idiosyncratic differences among databases can send a mixed message (i.e. *learn this, but it may not apply*). It is less confusing to simply state that advanced searching techniques are frequently specific to each individual database so users should make it a practice to check out the search instructions for every new data source they use

Consider selecting examples that advance the learning outcomes of the Tutorial.

Limiting:
Limiting by Publication Date
Unit 3: 8 of 10
http://www.kcvu.org/cvl/infolit3.nsf/ID/08036A79AF1E5D98852567B700639AF3

Observation:

This lesson discusses a second specific data type: publication date. The presentation is text-intensive.

Recommendation:

Combine and condense all lessons on limiting (6 through 9) **into a single lesson.**

Use paragraph breaks, indention and table formats to create visual interest.

Consider selecting examples that advance the learning outcomes of the Tutorial.

Limiting:
Limiting by Source
Unit 3: 9 of 10
http://www.kcvu.org/cvl/infolit3.nsf/ID/8BEE05B309369F74852567B7006A00D8

Observation:

This lesson introduces yet another type of data field: document type. Since many users may not care, or may not know that they need to care, about their information sources, this lesson should provide a more concrete and explicit presentation.

Recommendation:

Combine and condense all lessons on limiting (6 through 9) **into a single lesson.**

Consider illustrating this concept with a table:

Information Required	Document Type	Possible Reason (s)
Current, scholarly information	dt=research	Course assignment
etc.	etc.	etc.

Consider selecting examples that advance the learning outcomes of the Tutorial.

Omit the "Practice" exercise.

Truncation
Unit 3: 10 of 10
http://www.kcvu.org/cvl/infolit3.nsf/ID/70CE22674561AA7A8525676A006810CE

Observation:

This lesson re-introduces the concept of truncation and discusses the difference among symbols, depending upon the database. The presentation is text-intensive. The structural indicators do not positively contribute to the presentation of content.

How does this lesson relate to the lesson on truncation in Unit 1 (Lesson 10 of 15)?

The definition for "truncation symbol" presented in the first lesson of this unit provides a concise and effective explanation of the differences in truncation symbols among databases: "A truncation symbol may be a question mark ?, an asterisk *, a dollar sign $, or the pound sign #. To find out which one is correct for the database you are using, check the help screen."

Recommendation:

Eliminate the structural indicators.

Use paragraph breaks, indention and table formats to create visual interest.

Consider selecting examples that advance the learning outcomes of the Tutorial.

Condense the content in this lesson, emphasizing the explanation in Lesson 1 of this unit (cited above)**; combine the condensed content with Lesson 10 in Unit 1** (also on Truncation)**, and omit this as a separate lesson.**

Unit 3	Summary of Recommendations

- Eliminate the "*Welcome to Advanced Searching Techniques*" page, which lists the outcomes for Unit 3. The content of each learning unit, including each subordinate lesson, should be visible in the navigation bar that accompanies every page.

- Eliminate the structural indicators. The instructional narrative should flow without the constraints of artificial headings.

- Strive to eliminate redundancy within and between lessons.

- Consider eliminating the truncation symbol in examples that appear in lessons preceding Lesson 10 (*Truncation*).

- Combine Lessons 2, 3, 4, and 5 on Boolean searching into a single lesson on *Advanced Boolean Techniques*.

- Consider using a Venn diagram to illustrate the relationship of the Boolean operator with the corresponding word set.

- Consider selecting examples that advance the learning outcomes of the Tutorial, e.g. periodicals OR journals, journals NOT e-journals.

- Omit the "Practice" exercises.

- Combine and condense all lessons on limiting (6 through 9) into a single lesson.

- Provide an instructional context that answers the questions: "why do I need to know this?" or "how is this useful to me?"

- Be clear about when a specific kind of search technique is <u>needed</u> (e.g. nesting)—just because it can be done does not make it relevant.

- Beware that cautionary statements about the idiosyncratic differences among databases can send a mixed message (i.e. *learn this, but it may not apply*).

- Use paragraph breaks, indention and table formats to create visual interest.

- Condense the content in Lesson 10 and combine the condensed content with Lesson 10 in Unit 1 (also on Truncation).

Unit 4: Evaluating Sources

Welcome to Evaluation of Sources
Unit 4: 1 of 13
http://www.kcvu.org/cvl/infolit4.nsf

Observation:

This welcome page introduces the five learning categories in this unit:
- Authority
- Objectivity
- Reliability
- Timeliness
- Coverage

No definitions are provided nor hyperlinks to the corresponding lessons. A look at the contents of *Unit 4* will reveal the same information as provided on this page.

Recommendation:

Eliminate this page. *Unit 4* content, including each subordinate lesson, should be visible in the navigation bar that accompanies every page within this unit. Each sub-unit should be a hyperlink to the corresponding learning module.

Authority:
Who is the Author?
Unit 4: 2 of 13
http://www.kcvu.org/cvl/infolit4.nsf/ID/8a0bbb9dccec1201852567d2004a08e8

Observation:

This lesson introduces the importance of authorship when assessing the quality or value of an information source. It poses three critical questions:
- Can the author be identified?
- Is the author qualified to write on this topic?
- Does the author seem to be an expert on the topic?

While these are important questions, they are derived from a print-based world. The comparative difficulty of garnering answers to these same questions in a digital world does not reduce the growing popularity of virtual information sources. Authority questions need to reflect the qualities unique to the medium. Since the standards that apply to traditional authorship are compromised by the non-standard nature of the Web, what are the key quality indicators in this new environment?

Recommendation:

Provide users with the critical questions and assessment criteria necessary to evaluate e-information, specifically Web-based information.

Eliminate structural indicators.

Authority:
Is the Source Scholarly or Popular?
Unit 4: 3 of 13
http://www.kcvu.org/cvl/infolit4.nsf/ID/8bf0a729611e45df852567d3000750d1

Observation:

The title of this lesson suggests a broader scope than the content presented. This lesson categorizes periodical sources as either scholarly or popular. While the traditional distinctions between journals and magazines can be quite useful, especially to the student, it prompts the question as to whether Web sources can be "scholarly." If some Web sources, as well as some digital publications, can be scholarly, they are not addressed in this lesson. Nor are traditional monographs. What are the distinguishing criteria for categorizing these latter information sources as scholarly or popular?

The table contrasting the distinguishing attributes of scholarly journals and popular magazines is an effective method for presenting these differences (see typo in the world "scholarly").

Recommendation:

Expand the scope of this lesson to include Web sources and digital publications.

Present quality assessment criteria that transcend the physical format of an information source.

Eliminate structural indicators.

Objectivity:
Objectivity and Bias
Unit 4: 4 of 13
http://www.kcvu.org/cvl/infolit4.nsf/ID/a147b0b8bf5402e5852567d30009937f

Observation:

This lesson presents the concept of objectivity. While information is characterized as "mostly biased," "mixed" or "mostly objective," objectivity is undefined (both in this

context and in the glossary) and assessment criteria are not presented. What is objectivity and how do we know?

Recommendation:

Consider rewriting this lesson to define objectivity and to introduce the important measures of objectivity.

Provide explicit criteria by which an information consumer can evaluate objectivity. The critical questions presented in the fourth topic within this category on objectivity are especially good ones.

Consider combining, condensing and re-sequencing the constituent lessons on Objectivity.

Objectivity:
Intended Audience
Unit 4: 5 of 13
http://www.kcvu.org/cvl/infolit4.nsf/ID/4129f5954d760e8b852567d30009d7f0

Observation:

This lesson highlights the importance of the "intended audience" as an indicator of quality. It suggests that special interest publications can be evaluated for objectivity when the intended audience is known. This will be particularly true if the objective is to determine the nature or direction of a special interest, but this may not be the overriding question. Perhaps the first question is whether any given publication advances a special interest by design…or editorial policy. If objectivity implies the representation of information "independent" of personal feelings, prejudices, or interpretations, then a representation that is "dependent" upon a special interest implies the absence of objectivity.

Recommendation:

Be clear about the operational definition of objectivity.

Since the concept of "intended audience" goes to the heart of the "purpose" of a publication, **this discussion should follow the lesson on purpose.**

Consider combining, condensing and re-sequencing the constituent lessons on Objectivity.

Objectivity:
Purpose of the Source
Unit 4: 6 of 13
http://www.kcvu.org/cvl/infolit4.nsf/ID/eaf2cd2d1782e71d852567d3000a1d95

Observation:

This lesson discusses the foundational issue of purpose. It invites the learner to ask whether the sole purpose of an information source is to:

- Inform
- Sway opinion
- Entertain
- Advertise
- Report research

The graphic is as an effective illustration of the variant purposes of a publication.

Recommendation:

Merge the content in this lesson with the following content on *Determining the Purpose*.

Re-sequence content, introducing the concept of assessing objectivity with the combined lesson on purpose.

Combine, condense and re-sequence the constituent lessons on Objectivity.

Objectivity:
Determining the Purpose
Unit 4: 7 of 13
http://www.kcvu.org/cvl/infolit4.nsf/ID/d48e061a58c73c4b852567d3000a8ac2

Observation:

This lesson continues the discussion of purpose, with a focus on those information sources for which the purpose may be so discrete that it is difficult to discern. Four key questions are presented, each of which is an important measure of objectivity. The user is once again cautioned about using Internet sources but advised to be mindful of the site domain, which can provide a clue as to the primary function and purpose of a Web site.

Recommendation:

Merge the content in this lesson with the preceding lesson on *Purpose of the Source*.

Re-sequence content, introducing the concept of assessing objectivity with the combined lesson on purpose.

Expand the scope of all lessons to include non-print as well as print information sources.

Provide explicit criteria, albeit different criteria, for assessing the objectivity of all information sources, including e-information.

Omit the "Quiz."

Combine, condense and re-sequence the constituent lessons on Objectivity.

Reliability:
Accuracy
Unit 4: 8 of 13
http://www.kcvu.org/cvl/infolit4.nsf/ID/d6aca76ff71ef278852567d3000c0ad1

Observation:

This lesson introduces the topic of accuracy. Users are encouraged to be critical consumers of the information they encounter. While it would be highly desirable to "trace back important facts to their primary sources" in an ideal world, this may not appear to be practical in a world of information overload. Maintaining a focus on practical advice will sustain the credibility of this *Tutorial*. The example in this lesson is a good one, but a "compare and contrast" example may be more effective in this context.

Recommendation:

Edit this lesson with a focus on practical advice.

Consider using a "compare and contrast" example that highlights the differences between a documented source and an undocumented source within the same medium.

Eliminate structural indicators. Omit the "Quiz."

Timeliness:
Research Questions Determine Currency of Sources
Unit 4: 9 of 13
http://www.kcvu.org/cvl/infolit4.nsf/ID/319cf4a0fc393b40852567d3000fc821

Observation:

This lesson discusses the variable use of "current sources" versus "older sources." Perhaps "current" should be defined for the purpose of illustration. How current is "current?" If a user needs information that is current within the past six-months, what are his/her information options? If "current" means within the past two-years, what are his/her options? A presentation of multiple time-based scenarios in a table-format is an effective way of communicating these choices.

Recommendation:

Consider providing concrete examples of information sources based on time-parameters.

Consider presenting examples in a table format (e.g. the table in the third lesson in the sequence on timeliness).

Information Need	Information Source (s)
Current within the last *month*?	Newspapers (both print & online) Periodicals (weekly, semi-monthly & monthly) The Web
Current within the last *3-months*?	Etc.
Current within the last *6-months*?	
Current within the last *year*?	
Etc.	

Omit the "Quiz."

Combine the three lessons on timeliness, eliminating redundancies.

Timeliness:
Choosing Sources That Cover the Dates You Need
Unit 4: 10 of 13
http://www.kcvu.org/cvl/infolit4.nsf/ID/d9f5708706b36db1852567d3000e0a1b

Observation:

This lesson presents some ways that a user can determine whether various information sources are date-appropriate. Although the intent of this lesson can be construed to be one of providing specific selection criteria based upon the user's date requirements, the conversational tone of the presentation tends to obfuscate this objective.

This lesson continues a somewhat negative tone toward Web-based resources. While the cautionary advice is well-grounded, it can be re-worded in ways that provide positive strategies for assessing cyber-information.

Recommendation:

Omit the "Quiz."

Emphasize positive strategies for assessing cyber-information.

Combine the three lessons on timeliness, eliminating redundancies.

Timeliness:
Information Formats and the Currency of Information
Unit 4: 11 of 13
http://www.kcvu.org/cvl/infolit4.nsf/ID/32b8f331830b4706852567d3000fe4db

Observation:

This lesson re-visits the issue of currency vis-à-vis information formats. It is essentially redundant of the preceding two lessons. However, the table is an effective method for correlating the currency of an information need and the appropriate information sources. Caution should be exercised in introducing information "sources" that are transient in nature and difficult to both evaluate and to document (e.g. radio and television).

Recommendation:

Combine the three lessons on timeliness, eliminating redundancies.

Coverage:
Do Your Sources Match Your Need?
Unit 4: 12 of 13
http://www.kcvu.org/cvl/infolit4.nsf/ID/8acfe739f456c586852567d30013a8dc

Observation:

This lesson underscores the importance of coverage in the research process. It presumes that the issue of "coverage" is generally relevant. Is it? When does the "anything is better than nothing" rule preempt attention to coverage? Since the audience for this *Tutorial* is highly diverse, it is important to maintain a balance in the presentation of instructional content.

Recommendation:

Be explicit about when, for whom and/or under what circumstances coverage will be an important issue.

Combine the two lessons on Coverage.

Coverage:
Primary and Secondary Sources
Unit 4: 13 of 13
http://www.kcvu.org/cvl/infolit4.nsf/ID/22803854150717078525 67d300149cf9

Observation:

This lesson presents distinctions between primary and secondary information sources. It includes a table that contrasts specific types of primary and secondary sources. It also provides examples of discipline-specific differences among primary and secondary information sources. Why should the information consumer care if an information source is either primary or secondary? When is it important and when is it irrelevant?

Recommendation:

Be guided by the reason(s) why and when the *Tutorial* site visitor will need the instructional content of each lesson.

Combine the two lessons on Coverage.

Unit 4	Summary of Recommendations

- Eliminate the "*Welcome to Evaluation of Sources*" page, which introduces the five learning categories in Unit 4. The content of each learning unit, including each subordinate lesson, should be visible in the navigation bar that accompanies every page.

- Provide users with the critical questions and assessment criteria necessary to evaluate e-information, specifically Web-based information.

- Eliminate structural indicators. Headings should be content-driven.

- Expand the scope of Lesson 3: *Is the Source Scholarly or Popular?* to include Web sources and digital publications.

- Present quality assessment criteria that transcend the physical format of an information source.

- Consider re-writing Lesson 4: *Objectivity and Bias* to define objectivity and to introduce the important measures of objectivity.

- Provide explicit criteria by which an information consumer can evaluate objectivity. The critical questions presented in the fourth topic within this category on objectivity (i.e. Lesson 7) are especially good ones.

- Consider combining, condensing and re-sequencing the constituent lessons on *Objectivity*, introducing the concept of assessing objectivity with the combined lesson on purpose.

- Be clear about the operational definition of objectivity.

- Since the concept of "intended audience" goes to the heart of the "purpose" of a publication, this discussion in Lesson 5 (*Intended Audience*) should follow the disucssion on *Purpose of the Source* (Lesson 6).

- Merge the content in Lesson 6 (*Purpose of the Source*) with the content in Lesson 7 (*Determining the Purpose*).

- Expand the scope of all lessons in Unit 4 to include non-print as well as print information sources.

- Provide explicit criteria for assessing the objectivity of diverse information sources, including e-information.

- Omit quizzes.

- Edit Lesson 8 (*Accuracy*) with a focus on practical advice.

- Consider using a "compare and contrast" example that highlights the differences between a documented source and an undocumented source within the same medium.

- Consider providing concrete examples of information sources based on time-parameters.

- Consider presenting examples in a table format (e.g. the table in the third lesson in the sequence on timeliness).

- Combine the three lessons on timeliness (Lessons 9, 10 and 11), eliminating redundancies.

- Emphasize positive strategies for assessing cyber-information.

- Be explicit about when, for whom and/or under what circumstances coverage will be an important issue (Lesson 12: *Do Your Sources Match Your Need?*).

- Combine the two lessons on *Coverage* (Lessons 12 and 13).

- Be guided by the reasons *why* and *when* the *Tutorial* site visitor will need the instructional content of each lesson.

Unit 5: Citing & Copyright

Welcome to Citing & Copyright
Unit 5: 1 of 22
http://www.kcvu.org/cvl/infolit5.nsf

Observation:

This welcome page introduces the three learning categories in this unit:
- Quoting and Paraphrasing
- Citing Sources
- Copyright, Fair Use and the Internet

Although this introduction provides a concise prologue to *Unit 5*, definitions are not embedded in key words (e.g. plagiarism, citing) nor hyperlinks to the corresponding lessons. *Unit 5 Contents* reveal the same information as provided on this page.

Recommendation:

Eliminate this page. *Unit 5* contents, including each subordinate lesson, should be visible in the navigation bar that accompanies every page within this unit. Each sub-unit should be a hyperlink to the corresponding learning module.

Retain the introductory comments that establish the context for this *Unit* and use them to introduce the first lesson.

Quoting and Paraphrasing:
What is Plagiarism?
Unit 5: 2 of 22
http://www.kcvu.org/cvl/infolit5.nsf/ae990037d73445768525662d004455be/8cc410e4b5c8de8c8525674000640358?OpenDocument

Observation:

This lesson defines and describes plagiarism. It also includes a hotlink to *Plagiarism Q & A*, hosted by the College of Education, Health and Human Services at Central Michigan University. The *Plagiarism Q & A* is an effective complement to this lesson.

The presentation of content is text-intensive and while there is an "overview," there is no ensuing "lesson" or subsequent content.

Recommendation:

Eliminate the structural indicators.

Consider breaking up the text by featuring the definition of plagiarism as a text-unit and using a bulleted list to underscore the negative attributes of plagiarism.

Quoting and Paraphrasing:
Paraphrasing
Unit 5: 3 of 22
http://www.kyvu.org/cvl/infolit5.nsf/ae990037d73445768525662d004455be/3f0c22c6c408fe66852567580058bc02?OpenDocument

Observation:

This lesson introduces the concept of paraphrasing, contrasting it with the option of quoting a source. The presentation of an original passage, the same passage paraphrased and the paraphrased passage with the appropriate citation is an effective illustration of each. The pale yellow color-screen highlighting each of the sample passages is visually effective.

A definition box is hotlinked to the words "paraphrasing" and "cited." A concise definition should always appear in the definition box.

Recommendation:

Eliminate the structural indicators and the "Practice" exercise.

Provide the definition for "cite" in the pop-up definition box and point to the lesson on *How to Cite Sources*.

Quoting and Paraphrasing:
What Kinds of Sources Need to be Cited?
Unit 5: 4 of 22
http://www.kyvu.org/cvl/infolit5.nsf/ae990037d73445768525662d004455be/ec8d4dc59fa1e4d48525676a005568e5?OpenDocument

Observation:

This lesson emphasizes the need to cite any and all sources of information, regardless of the format of the information source.

Recommendation:

Consider presenting the list of various information sources in a table, capitalizing the first work of each entry.

Consider hyperlinking each source example to an actual citation for that source.

Eliminate the structural indicators and the "Quiz."

Combine *What Kinds of Sources Need to be Cited?* (4 of 22) **and What Kind of Information Should be Documented?** (5 of 22) **into single lesson on *Documenting and Citing Sources.***

Quoting and Paraphrasing:
What Kind of Information Should be Documented?
Unit 5: 5 of 22
http://www.kyvu.org/cvl/infolit5.nsf/ae990037d73445768525662d004455be/6437794dd7c818388525676a0058839f?OpenDocument

Observation:

This lesson identifies the wide variety of intellectual property that require documentation when borrowed for a secondary purpose. The use of the pale yellow color-screen is an effective way to visually demarcate "exceptions."

The two questions and answers in the "Quiz" section of this lesson are particularly good ones—concise, relevant and topic-neutral.

Recommendation:

Retain interactive elements that substantially contribute to the learning experience, e.g. pertinent, topic-neutral questions, when pedagogically effective.

Consider renaming the header for interactive questions, e.g. *What do YOU think?* The non-essential use of the word "quiz" can be patronizing with a diverse audience.

Combine *What Kinds of Sources Need to be Cited?* (4 of 22) **and What Kind of Information Should be Documented?** (5 of 22) **into single lesson on *Documenting and Citing Sources.***

Quoting and Paraphrasing:
Note-Taking Tips to Avoid Plagiarism
Unit 5: 6 of 22
http://www.kyvu.org/cvl/infolit5.nsf/ae990037d73445768525662d004455be/193e61afaae8d58f8525676a005a23ec?OpenDocument

Observation:

This lesson offers some practical and specific tips on taking notes during the reading and research process.

Recommendation:

Use a separator line (i.e. "air space") between each "tip" in the bulleted list.

Consider using an alternative color (in addition to the bold font) for emphasizing each tip.

How to Cite Sources:
Citing Sources
Unit 5: 7 of 22
http://cvu.collegis.com/cvl/infolit5.nsf/ae990037d73445768525662d004455be/0bc23e8b65961e1e85256740006bbb81?OpenDocument

Observation:

This lesson is an overview without content. It introduces the subsequent lesson on citing sources.

Recommendation:

Eliminate this as a separate "lesson," embedding this introduction in the following lesson.

How to Cite Sources:
Style Manuals
Unit 5: 8 of 22
http://cvu.collegis.com/cvl/infolit5.nsf/6de4551ecb19866e8525662e00544ec8/8c34aac024890c0685256770006a25dc?OpenDocument

Observation:

This lesson introduces the purpose of style manuals. It explains "parenthetical references" and "in-text citations," although neither term is included in the glossary. It embeds a link to the lesson on *Style Manuals Available in Print and on the WWW* (Unit 5: 18 of 22)—an excellent reference page.

Recommendation:

Consider including the terms "parenthetical reference" and "in-text citation," as well as "style manual" in the glossary.

Hyperlink the term "parenthetical references" to the following lesson, by the same name.

Omit the "Quiz."

Consider embedding the content in this lesson within a consolidated lesson on *Citing Sources*: *MLA Style* (per the following recommendations).

How to Cite Sources:
Parenthetical References
Unit 5: 9 of 22
http://cvu.collegis.com/cvl/infolit5.nsf/6de4551ecb19866e8525662e00544ec8/74285f220dee6a1c85256770006ab2aa?OpenDocument

Observation:

This lesson focuses on the style requirements for parenthetical references in the MLA Style Manual. The examples illustrate MLA style. The pale yellow color-screen is again used effectively.

Recommendation:

Consider expanding the scope of this lesson to illustrate the differences in style among MLA, APA and the Chicago style manuals.

Consider emphasizing the commonality in purpose, albeit different approaches to style, among the different protocols.

If the intent of the three lessons on parenthetical references is to provide a quick reference to the most frequently used MLA style formats, **consider combining the content into one page, re-purpose it and re-name it accordingly**, e.g. *Citing Sources*: *MLA Style*. Consider it a link that can be bookmarked for quick reference—not a "lesson."

How to Cite Sources:
Other Rules for Parenthetical References
Unit 5: 10 of 22
http://cvu.collegis.com/cvl/infolit5.nsf/6de4551ecb19866e8525662e00544ec8/7599ffb6f7c5bc6785256770006b36a6?OpenDocument

Observation:

This lesson presents MLA style requirements for citing multi-volume works, works listed by title and works by a corporate author. Examples are not highlighted.

Recommendation:

If the intent of the three lessons on parenthetical references is to provide a quick reference to the most frequently used MLA style formats, **consider combining the content into one page, re-purpose it and re-name it accordingly**, e.g. *Citing Sources*: *MLA Style*. Consider it a link that can be bookmarked for quick reference—not a "lesson."

Continue using a color-screen to differentiate a textual-example and the accompanying narrative, such as:

> Citing multi-volume works:
> When you are citing a single volume (*volume 4*) of a multi-volume work (*27 volumes*) , separate the volume number from the page number by a colon and a space. For example
> (Moulton 4: 27)

How to Cite Sources:
Other Rules for Parenthetical References, continued
Unit 5: 11 of 22
http://cvu.collegis.com/cvl/infolit5.nsf/ae990037d73445768525662d004455be/1bb043df4205b1ff852567ac00778619?OpenDocument

Observation:

This lesson continues to present specific MLA style requirements: citing two or more works by the same author, indirect sources and online periodicals. Examples are not highlighted.

Recommendation:

If the intent of the three lessons on parenthetical references is to provide a quick reference to the most frequently used MLA style formats, **consider combining the content into one page, re-purpose it and re-name it accordingly**, e.g. *Citing Sources*: *MLA Style*. Consider it a link that can be bookmarked for quick reference—not a "lesson."

Continue using a color-screen to differentiate a textual-example and the accompanying narrative.

How to Cite Sources:
Works Cited Page
Unit 5: 12 of 22
http://cvu.collegis.com/cvl/infolit5.nsf/6de4551ecb19866e8525662e00544ec8/a11cdf33006048828525677
0006be95e?OpenDocument

Observation:

This lesson, identified as an "Overview," introduces the following five lessons:

- *Works Cited Page—Books (13 of 22)*
- *Works Cited Page—Books, continued (14 of 22)*
- *Works Cited Page—Articles (15 of 22)*
- *Works Cited Page—Government Publications (16 of 22)*
- *Works Cited Page—Internet Resources (17 of 22)*

Each ensuing lesson is comprised of examples of MLS style formats for citing books, articles, government publications and Internet resources—replicating the function of the MLA handbook.

Recommendation:

Consider combining the content of Lessons12-17 into one page, e.g. *Quick Reference to MLA Style Formats*. Consider it a link that can be bookmarked for quick reference—not a "lesson"—using anchor tags for quick navigation among sections.

How to Cite Sources:
Works Cited Page--Books
Unit 5: 13 of 22
http://cvu.collegis.com/cvl/infolit5.nsf/6de4551ecb19866e8525662e00544ec8/d2eb1bbf264c1f4185256770
006d1629?OpenDocument

Observation:

This lesson presents the MLA citation style for frequently used book formats.

Recommendation:

Consider combining the content of Lessons12-17 into one page, e.g. *Quick Reference to MLA Style Formats*. Consider it a link that can be bookmarked for quick reference—not a "lesson"—using anchor tags for quick navigation among sections.

How to Cite Sources:
Works Cited Page—Books, continued
Unit 5: 14 of 22
http://cvu.collegis.com/cvl/infolit5.nsf/By+Sequence/AE342321E74C8A53852567AC0077C2E6?OpenDocument

Observation:

This lesson continues examples of MLA citation style for frequently used book formats.

Recommendation:

Consider combining the content of Lessons12-17 into one page, e.g. *Quick Reference to MLA Style Formats*. Consider it a link that can be bookmarked for quick reference—not a "lesson"—using anchor tags for quick navigation among sections.

How to Cite Sources:
Works Cited Page—Articles
Unit 5: 15 of 22
http://cvu.collegis.com/cvl/infolit5.nsf/6de4551ecb19866e8525662e00544ec8/693092fbd02111c185256770006d2437?OpenDocument

Observation:

This lesson presents the MLA citation style for frequently used periodical sources: magazines, journals and newspapers.

Recommendation:

Consider combining the content of Lessons12-17 into one page, e.g. *Quick Reference to MLA Style Formats*. Consider it a link that can be bookmarked for quick reference—not a "lesson"—using anchor tags for quick navigation among sections.

How to Cite Sources:
Works Cited Page—Government Publications
Unit 5: 16 of 22
http://cvu.collegis.com/cvl/infolit5.nsf/6de4551ecb19866e8525662e00544ec8/e543d89226a43d6f85256770006d2edb?OpenDocument

Observation:

This lesson presents the MLA citation style for government publications.

Recommendation:

Consider combining the content of Lessons12-17 into one page, e.g. *Quick Reference to MLA Style Formats*. Consider it a link that can be bookmarked for quick reference—not a "lesson"—using anchor tags for quick navigation among sections.

How to Cite Sources:
Works Cited Page—Internet Resources
Unit 5: 17 of 22
http://cvu.collegis.com/cvl/infolit5.nsf/6de4551ecb19866e8525662e00544ec8/e5bf5cebfa13952d85256770006d3841?OpenDocument

Observation:

This lesson presents the MLA citation style for frequently used Internet sources: a Web page, e-journal articles and e-mail or listserv.

Recommendation:

Consider combining the content of Lessons12-17 into one page, e.g. *Quick Reference to MLA Style Formats*. Consider it a link that can be bookmarked for quick reference—not a "lesson"—using anchor tags for quick navigation among sections.

How to Cite Sources:
Style Manuals Available in Print and on the WWW
Unit 5: 18 of 22
http://cvu.collegis.com/cvl/infolit5.nsf/6de4551ecb19866e8525662e00544ec8/3a1658a8756128a185256770006d6229?OpenDocument

Observation:

This lesson provides an excellent reference to the most frequently used style manuals, with hyperlinks to corresponding websites.

Recommendation:

Consider re-purposing this as a link that can be bookmarked for quick reference—not a "lesson."

Copyright, Fair Use and the Internet:
Copyright, Fair Use and the Internet
Unit 5: 19 of 22
http://cvu.collegis.com/cvl/infolit5.nsf/6de4551ecb19866e8525662e00544ec8/7891dd54c29a315d85256740006bc6d9?OpenDocument

Observation:

This lesson (and page) is a one-sentence "overview," introducing the lessons that follow.

Recommendation:

Incorporate this introduction into a consolidated lesson on *Copyright and Fair Use.*

Copyright, Fair Use and the Internet:
Understanding Copyright
Unit 5: 20 of 22
http://cvu.collegis.com/cvl/infolit5.nsf/6de4551ecb19866e8525662e00544ec8/60b81631a7ebd31b85256771004c7676?OpenDocument

Observation:

This lesson introduces the concept of copyright and lists the term of copyright for post-1977 works, works published 1964-1977, works published 1923-1963 and works published before 1923. What is the desired learning outcome for this lesson? If respect for intellectual property is a matter of compliance with the law of copyright, perhaps it is less important to remember the terms of the copyright law than to know the strategies for securing permission when using copyrighted materials outside the bounds of fair use.

Recommendation:

Consider re-visiting the purpose and learning outcome for this lesson.

Omit the "Quiz."

Incorporate the content of this lesson into a consolidated lesson on *Copyright and Fair Use.*

Copyright, Fair Use and the Internet:
Fair Use
Unit 5: 21 of 22
http://cvu.collegis.com/cvl/infolit5.nsf/6de4551ecb19866e8525662e00544ec8/0e7fe3f7a5b69afe85256771004dd4ba?OpenDocument

Observation:

This lesson introduces the concept of *fair use* and identifies the circumstances under which copyrighted materials can be "fairly" used without the express permission of the

copyright owner. How is the intended audience likely to use copyrighted resources *fairly*? This lesson needs to speak to them in a more personal way, rather than in a somewhat abstract tone.

Recommendation:

Consider altering the tone of this lesson to connect with the intended audience in a more personal way. Is photocopying pages from a printed publication for personal use "ok?" Is photocopying the entire publication for personal use "ok?" Is copying a movie from HPO "ok?" Is burning a CD-copy of songs downloaded from Napster "ok?"

Omit the "Quiz."

Incorporate this introduction into a consolidated lesson on *Copyright and Fair Use.*

Copyright, Fair Use and the Internet:
How Copyright Applies to Internet Sources
Unit 5: 22 of 22
http://cvu.collegis.com/cvl/infolit5.nsf/6de4551ecb19866e8525662e00544ec8/ab10e698377438598525677 1004e7f34?OpenDocument

Observation:

This lesson provides a focus on copyright and the Internet. It includes hyperlinks to two Websites that are dedicated to the topic of copyright. This may be one of the most important lessons in Unit 5—as the Web is rich with opportunity for "borrowing" creative property and the rules are muddy.

Recommendation:

Consider altering the tone of this lesson to connect with the intended audience in a more personal and explicit way.

Consider renaming this lesson, e.g. *The Dos and Don'ts of Borrowing on the Web*.

Unit 5	Summary of Recommendations

- Eliminate the "*Welcome to Citing & Copyright*" page, which introduces the three learning categories in Unit 5. The content of each learning unit, including each

subordinate lesson, should be visible in the navigation bar that accompanies every page. Retain the introductory comments that are currently presented in Lesson 1, which establish the context for *Unit 5*, and use them to introduce the first lesson.

- Eliminate the structural indicators, the practice exercises and the quizzes.

- Consider renaming Quizzes to: *What do YOU think?* The word "quiz" can be problemmatic with a diverse audience.

- Consider breaking up the text in Lesson 2 (*What is Plagiarism*?) by featuring the definition of plagiarism as a text-unit and using a bulleted list to underscore the negative attributes of plagiarism.

- Provide the definition for "cite" in a pop-up definition box (Lesson 3: *Paraphrasing*) and point to Lesson 7 on *How to Cite Sources.*

- Consider presenting the list of various information sources in a table, capitalizing the first work of each entry (Lesson 4: *What Kinds of Sources Need to be Cited*?).

- Consider hyperlinking each source example to an actual citation for that source (Lesson 4: *What Kinds of Sources Need to be Cited*?).

- Combine *What Kinds of Sources Need to be Cited?* (Lesson 4 of 22) and What Kind of Information Should be Documented? (Lesson 5 of 22) into single lesson on *Documenting and Citing Sources.*

- Retain interactive elements that substantially contribute to the learning experience, when pedagogically effective.

- Use a separator line (i.e. "air space") between each "tip" in the bulleted list in Lesson 6.

- Consider using an alternative color (in addition to the bold font) for emphasizing each tip in Lesson 6.

- Eliminate Lesson 7 as a separate "lesson," embedding this introduction in Lesson 8.

- Consider including the terms "parenthetical reference" and "in-text citation," as well as "style manual" in the glossary.

- Hyperlink the term "parenthetical references" in Lesson 8 to the lesson, by the same name (Lesson 9).

- Consider embedding the content in Lesson 8 within a consolidated lesson on *Citing Sources*: *MLA Style*.

- Consider expanding the scope of the lesson on *Style Manuals* (Lesson 8) to illustrate the differences in style among MLA, APA and the Chicago style manuals.

- Consider emphasizing the commonality in purpose, albeit different approaches to style, among the different protocols.

- Consider combining the content in Lessons 9, 10 and 11(*Parenthetical References*) into one page, re-purpose it and re-name it, e.g. *Citing Sources*: *MLA Style*. Consider it a link that can be bookmarked for quick reference—not a "lesson."

- Continue using a color-screen to distinguish between a textual-example and the accompanying narrative.

- Consider combining the content of Lessons12-17 into one page, e.g. *Quick Reference to MLA Style Formats*. Consider it a link that can be bookmarked for quick reference—not a "lesson"—using anchor tags for quick navigation among sections.

- Incorporate the introduction in Lesson 19 (*Copyright, Fair Use and the Internet*) into a consolidated lesson on *Copyright and Fair Use.*

- Consider re-visiting the purpose and learning outcome for Lesson 20: *Understanding Copyright*.

- Incorporate the content of Lesson 20 (*Understanding Copyright*) into a consolidated lesson on *Copyright and Fair Use.*

- Consider altering the tone in Lesson 21 (*Fair Use*) to connect with the intended audience in a more personal way. Is photocopying pages from a printed publication for personal use "ok?" Is photocopying the entire publication for personal use "ok?" Is copying a movie from HPO "ok?" Is burning a CD-copy of songs downloaded from Napster "ok?"

- Incorporate *Lesson 21 (*Fair Use*)* into a consolidated lesson on *Copyright and Fair Use.*

- Consider altering the tone in Lesson 22 (*How Copyright Applies to Internet Sources*) to connect with the intended audience in a more personal and explicit way.

- Consider renaming Lesson 22 (*How Copyright Applies to Internet Sources*), e.g. *The Dos and Don'ts of Borrowing on the Web*.

Section III: User Survey Results

A user survey was mounted at the *KCVL Information Literacy Tutorial* website on August 4. A link to the survey was embedded at multiple points throughout the *Tutorial*. The survey was designed to elicit user feedback about :

- The reason *why* they visited the Tutorial website,
- Difficulty navigating the site in order to learn what they wanted to know,
- The amount of time they were willing to spend in order to learn what they wanted to know,
- The Tutorial units they had actually completed,
- The Tutorial units they had accessed but not completed,
- Whether the Tutorial was useful to them,
- Whether the *practice exercises* and the *examples* were useful,
- Whether they used the unit *quizzes*,
- What they would recommend changing about the *Tutorial* website,
- If they would recommend this site to a friend,
- If yes, why?
- If no, why not?
- What they liked most about the site, and
- What they liked least.

A copy of the survey instrument is available in APPENDIX I.

Survey results were extracted on September 8. A total of 51 surveys had been submitted. This relatively meager response to the survey was certainly a product of timing. The month of August is not the most opportune time to implement a user survey of this nature, as it coincided with summer break for many students and summer and/or holiday vacations for non-students.

This issue of response raises a valid concern about sample size. While it is certainly a truism that the larger the sample, the more instructive the feedback, *sample size* is not a critical concern in this context. Defining a "sample" implies that the population as a whole is known. It is difficult to estimate an optimum sample size when it is unclear how big or how small the entire population is (i.e. KCVU students, any or all students enrolled in higher education within the Commonwealth of Kentucky, all citizens of the Commonwealth, etc.…?) If the results of this survey were to be approached from the perspective that the respondents are representative of the entire population, the ensuing analysis would be seriously encumbered by sampling error and coverage error.

A further issue is the nature of voluntary, self-administered surveys. Respondents to voluntary surveys are, by definition, self-selected and, therefore, not necessarily representative of the entire population (even if it could be defined and quantified). Moreover, since the population for this survey is conceivably quite large, non-response error becomes a significant factor. This is exacerbated when the response (i.e. 51) is small. The probability that nonrespondents will be different from respondents is likely to be greater when the response rate is lower.

However, inferential statistics are not necessary in order to learn from a voluntary, self-administered survey. If the results of this survey are approached from the perspective that the respondents (however many or few) are sharing their observations and assessment of their experience, this feedback will produce an insight about user experience that will not otherwise be available. Given the nature of an indefinable, perhaps transient, and very virtual population, qualitative feedback is of great value.

Survey results were somewhat evenly distributed between the beginning and ending dates of August 4 and September 8, with the exception of August 23 and September 5. The largest bulge occurred on September 5, which suggests that an entire class was required to use the *Tutorial* and respond to the survey. Comments accompanying the surveys submitted on September 5 were predominantly negative [see APPENDIX II].

Date Submitted	Count
4-Aug-00	2
8-Aug-00	1
9-Aug-00	2
10-Aug-00	2
11-Aug-00	1
14-Aug-00	1
17-Aug-00	2
18-Aug-00	1
21-Aug-00	2
23-Aug-00	6
24-Aug-00	1
25-Aug-00	2
26-Aug-00	2
29-Aug-00	3
30-Aug-00	1
5-Sep-00	21
8-Sep-00	1
Total:	**51**

Of the 51 surveys submitted, 3 were totally blank. Each survey response contained some missing values. The first question, "*Why did you visit the KCVL Tutorial site*," received the most responses; the seventh question, "*Were the practice exercises helpful to you*," garnered the fewest responses (15 missing values).

	Q1	**Q2**	**Q3**	**Q4**	**Q5**	**Q6**	**Q7**	**Q8**	**Q9**	**Q11**
Valid	47	44	46	45	43	42	36	38	38	40
Missing	**4**	**7**	**5**	**6**	**8**	**9**	**15**	**13**	**13**	**11**
% Missing	8%	14%	10%	12%	16%	18%	29%	25%	25%	22%
Total	51	51	51	51	51	51	51	51	51	51

The following is a narrative summary of the responses to each question. Descriptive statistics are presented in APPENDIX II.

Q1: **Why did you visit the KCVL *Tutorial* website?**

Nearly half of the respondents (48.9%) visited the KCVL Tutorial website because "*my instructor told us to use the Tutorial*." The next largest group of respondents (15.7%) thought it would tell them "how to use the Virtual Library." It may be reasonable to assume that this latter group represents those users who followed the link labeled "*How*

to Use the Virtual Library" at the KCVL homepage. The next largest group of respondents indicated that a "librarian suggested it" to them. Few respondents in this small sample found it by accident. This may suggest that when the Tutorial is ready to be launched Web-wide, an aggressive effort to submit the site to a host of search engines will produce more visitors. A site at http://searchenginewatch.com/webmasters/index.html offers a number of search engine submission tips.

Q2: **How difficult was it to navigate this site, in order to learn what you wanted to know?**

The majority of respondents (52.3%) reported no difficulty navigating this site. Yet, the next largest group of respondents (22.7%) found it to be very difficult. Over 47% reported some difficulty with navigation at this site (i.e. very difficult, difficult or somewhat difficult). This dichotomous response suggests the broad diversity of *Tutorial* users and the differences in their objectives when they visited the site.

Q3: **How much time were you willing to spend at this website to learn what you wanted to know?**

Survey respondents were either willing to spend as much time as necessary (43.5%) or as little time as necessary, less than 5-minutes (28.3%). When the respective time categories are aggregated, the majority (56%) was only willing to spend less than 30-minutes. This response is consistent with the literature on Web user behavior. Web users are in a hurry (Barger, 1999b) and the average length of their stay at any one website is brief (Nielsen, 2000).

Q4: **Which of the *Tutorial* units have you fully completed?**

The single most frequent response to this question was "*none, I just moved around the site reading the lessons that I needed*" (31.1%). Over a third responded that they couldn't find the information they needed (13.3%) or they checked "other" (20%). Of those responses that identified a specific learning unit, *Web Basics* was the most frequently completed (17.8%). It is also the first of the five units. The next largest group of respondents named Unit 5: *Citing & Copyright* (6.7%). Only one respondent (2.2%) reported using *Basic Searching*, two respondents named *Advanced Searching* (4.4%) and another two respondents completed *Evaluating Sources* (4.4%). Six of the fifty-one respondents failed to respond to this question. These responses may suggest that the casual visitor to the KCVL *Tutorial* website is not there to complete a curriculum.

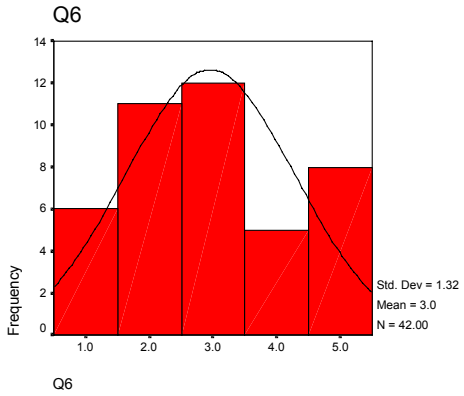
Q5: **Which *Tutorial* units have you used but not completed?**

The dominant response to this question was "I can't remember" (37.2%). The next significant response was "none" (34.9%). In other words, 72% responded that they either couldn't remember the learning units they used or simply didn't use any. Another 16% didn't respond to the question at all. This may suggest that these users did not explore this site and that their visit was limited to primarily one unit or one lesson.

Q6: **Were the *Tutorial* units/lessons that you completed useful to you?**

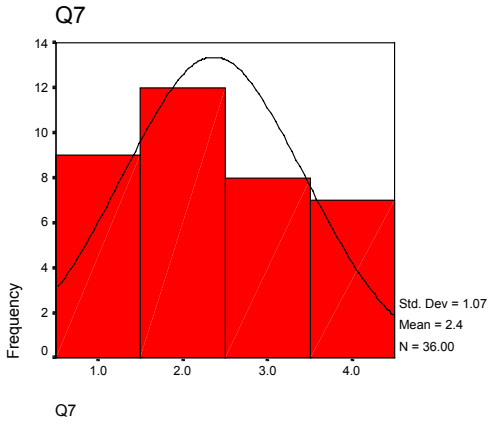
Approximately 69% of the respondents to this question reported that the Tutorial *units/lessons* that they completed were useful to them; most (28.6%) found them to be "somewhat useful." Nearly 31% provided the opposite response—11.9% indicated that they were "not very useful" and another 19% said "not at all." While the desired outcome to this question would be a positively skewed distribution of responses, the

"normality" of the responses may attest to the wide diversity among KCVL *Tutorial* users and the variety of reasons they have for accessing the *Tutorial*.



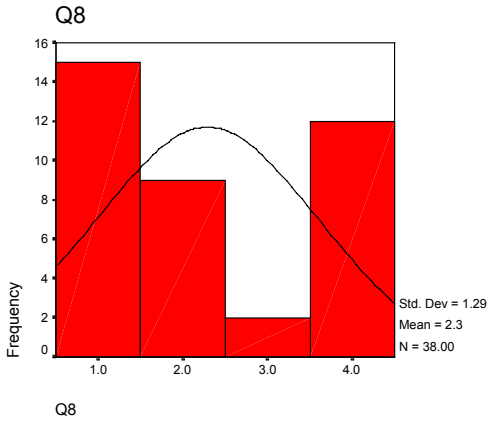
Q7: **Were the *practice exercises* helpful to you?**

The distribution of responses to this question is very similar to the preceding question, albeit a bit more positively skewed. The most frequent response was "sometimes, but not always" (33.3%). In total, 58.3% responded either favorably or somewhat favorably to this question, while 41.6% responded negatively. However, 29% of the 51 respondents, or 15 in number, failed to respond to the question at all.



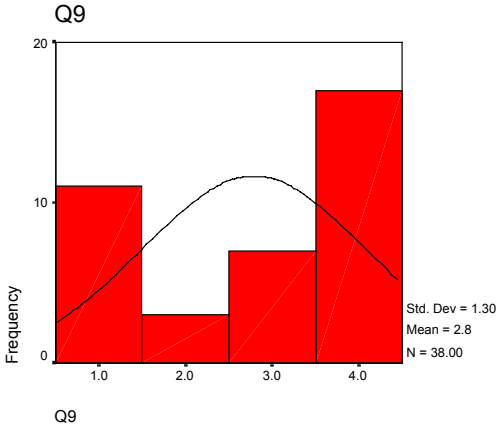
Q8: **Did you find the *examples* useful?**

Fifteen respondents replied “yes” (39.5%) and twelve replied “no” (31.6%). The remaining 29% said “sometimes, but not always” (23.7%) or “not very often” (5.3%). Thirteen didn’t respond.



Q9: **Did you use the unit *quizzes*?**

Nearly 45% of the respondents to this question did not use the unit quizzes, and another 18.4% indicated they didn’t use the quizzes very often. Yet, 28.9% of the respondents did and 7.9% did, but not always. Once again the distribution of responses is widely variant, slightly skewed in a negative direction.



Q10: **What would you recommend changing about his site?**

All responses to each of the open-ended questions (Q10, Q12, Q13, Q14, Q15) are recorded in APPENDIX II. Some responses were ambiguous or unrelated. Generic responses to Question 10 ranged from "nothing" to "everything." Specific suggestions included:

- ⇨ Less wordy, larger print, less activity on each screen
- ⇨ Quizzes were two confusing for me.
- ⇨ The examples
- ⇨ Make sure the quizzes can be used. In my section the quizzes could not be displayed because there was an error on the webpage.
- ⇨ Rather than just "how to do research" I'd like to see "How to use the Virtual Library."

This latter comment speaks to the confusion resulting from misleading labeling at the KCVL website.

Q11: **Would you recommend this site to a friend?**

Eleven, or 22% of the respondents, chose to not answer this question. Of those responding, 23 said "yes," and 17 said "no." Dichotomous viewpoints reflected in earlier responses continued to be apparent in the responses to Question 11.

Q12: **If <u>YES</u>, why?**

The responses to this question, as one would expect, are generally positive. Few of the comments provide specific feedback. However, several of the comments reflect user's perceptions that the KCVL Tutorial is useful and user-friendly.

Q13: **If <u>NO</u>, why not?**

Conversely, the comments to this question are generally negative, with few specific reasons. Those that were specific included:

- ⇨ TOO MUCH READING [*sic*]
- ⇨ Lack of graphics
- ⇨ It doesn't show how to use the Virtual Library.

Q14: **What did you LIKE MOST about this website?**

Although there were few specific responses to this question, the following comments were made:

- ⇨ Learning how to search on the WWW
- ⇨ Units one and two
- ⇨ The immediate reinforcement of the practice questions
- ⇨ The quizzes

Q15: **What did you LIKE LEAST about this website?**

The following opinions are also abridged from the complete results reproduced in APPENDIX II. These comments represent more specific feedback.

- ⇨ Citing
- ⇨ Like I said, it was not detailed enough.
- ⇨ Needs more.
- ⇨ The copywrite [*sic*] unit because it was not as interesting to me.
- ⇨ There is too much information on each page.
- ⇨ It was too confusing

- That you have to close out the box every time you answer a question--tedious! Slows down the process.
- The quiz.
- Too much reading
- Lack of graffix [*sic*]
- The way everything was written
- All the reading

All responses are available in APPENDIX II.

While the results of this survey were limited by the relatively brief implementation period, the time of year it was implemented and the comparatively few responses, the importance of ongoing user feedback must be emphasized. A feedback link (e.g. "*Tell Us What You Think*") should be embedded on every page of the *Tutorial* website. If a user becomes confused or frustrated they should be able to immediately click on that link and let the authors know. If they learn something they needed to know and it was a gratifying learning experience, they should be able to express their enthusiasm or share their success with the authors. User feedback should be a permanent feature of the KCVL website, providing formative assessment on an ongoing basis.

Section IV: Course Management Software as a Medium for the KCVL Tutorial

One of the expectations for this report was a discussion of the "pros and cons" of the use of Eduprise software vis-à-vis other platforms. This expectation may have been grounded in the belief that a course management software (CMS) platform is the preferred vehicle for delivering the KCVL *Tutorial*. If this is the case, then indeed it is important to identify a CMS that offers the greatest functionality with the most flexibility, since a single delivery medium will need to meet the twofold purpose of the *Tutorial*.

How well can a single delivery medium serve two very different purposes? CMS technology is, by definition, proprietary. The functionality necessary to manage a virtual classroom, enroll students, assess performance, generate feedback and track student progress encumbers the functionality necessary to support just-in-time learning.

KCVL's current CMS vendor, Eduprise.com, is an application service provider for enterprise-wide applications within the e-learning market. Its mission is much broader than delivering a competitive course management software product. Perhaps for this reason it has initiated strategic partnerships with some of the principal vendors in the CMS marketplace: WebCT, BlackBoard and WBT. These partnerships enable Eduprise clients to continue their relationship with Eduprise for application hosting and custom service packages, if they so choose, while migrating to a more robust CMS if that is in their best interest. It suggests, however, that Eduprise has shifted its prior emphasis upon a delivery platform to application services. Given this scenario, it is highly unlikely that Eduprise will invest heavily in the ongoing development of its CMS product.

That said, is there a better product for the KCVL *Tutorial*? Probably. Which one? It depends. It may depend most on the future direction of the KCVU—a matter outside the purview of this project. It may also depend upon the decisions resulting from this project—since this question becomes secondary when the design demands of a standards-

based website are no longer placed upon a CMS for the purposes of the KCVL *Tutorial*. In other words, if the *Tutorial* is developed exclusively as a "class," it can work within the context of any of the major course management systems. If it is developed as a learning website, then the question of a CMS is no longer relevant.

This leads to the most pressing question: whether the KCVL *Tutorial* will remain as a dual purpose learning module in a single format, whether it will be re-designed for dual formats, or whether its function will be constrained to meet only one of its two purposes?

The following decision matrix presents each of these alternatives:

- Alternative A. The *KCVL Tutorial* is delivered solely on a CMS platform with the dual intent of providing both a curricular and a non-curricular e-learning experience at a single site. (*This alternative represents current practice.*)

- Alternative B. The *KCVL Tutorial* is delivered on two platforms, re-designed to meet the objectives of (1) a class in a CMS environment and (2) a just-in-time learning center in a Web environment.

- Alternative C. The *KCVL Tutorial* is delivered solely on the Web, with the singular intent of providing a non-curricular, just-in-time learning experience.

- Alternative D. The *KCVL Tutorial* is delivered solely on a CMS platform, with the singular intent of providing a curriculum.

	PRO	CON
ALTERNATIVE A *KCVL Tutorial* delivered solely on a CMS platform with the intent of providing both a curricular and a non-curricular e-learning experience at a single site. (*status quo*)	▪ Simplifies development & maintenance ▪ Allows compatibility with the KCVU learning interface ▪ Provides a learning module that can be readily ported into any online curriculum within the same CMS	▪ Unlikely to meet the needs of a heterogeneous group of cyberlearners who want accessible & scannable bytes of information ▪ Proprietary software does not ensure standards-based compliance for diverse Web applications ▪ Use of a proprietary platform may limit the talent bank for site design & maintenance
ALTERNATIVE B *KCVL Tutorial* delivered on two platforms, re-designed to meet the objectives of (1) a class in a CMS environment and (2) a just-in-time learning center in a Web environment.	▪ Permits the development & presentation of the content domain to be re-focused on two different audiences: enrolled students (CMS) and non-enrolled cyberlearners (Web) ▪ Ensures consistency between the purpose of the *Tutorial* & the learning outcomes ▪ Allows compatibility with the KCVU learning interface and a standards-based Web application ▪ Provides a learning module that can be ported into any online curriculum within the same CMS environment and an accessible and flexible learning module that is ubiquitous to the Web	▪ Requires content domain to be re-designed for two different platforms ▪ Requires maintenance in two different platforms ▪ Increases production costs ▪ May increase maintenance costs

ALTERNATIVE C *KCVL Tutorial* delivered solely on the Web, with the singular intent of providing a non-curricular, just-in-time learning experience.	▪ Focuses the development & presentation of the content domain upon a specific audience: non-enrolled cyberlearners ▪ Simplifies development & maintenance ▪ Ensures consistency between the purpose of a website & the learning outcome ▪ Ensures compatibility with standards-based Web applications ▪ Provides a learning module that that is accessible and flexible	▪ Fails to provide a formal curriculum
ALTERNATIVE D *KCVL Tutorial* delivered solely on a CMS platform, with the singular intent of providing a curriculum.	▪ Focuses the development & presentation of the content domain upon a specific audience: enrolled students. ▪ Simplifies development & maintenance ▪ Ensures consistency between the purpose of a curriculum & the learning outcome ▪ Allows compatibility with the KCVU learning interface ▪ Provides a learning module that can be readily ported into any online curriculum within the same CMS	▪ Limits information literacy instruction to enrolled students ▪ Limits the design & development of the content presentation to a proprietary environment ▪ Fails to provide non-enrolled cyberlearners with an accessible and flexible learning module that is ubiquitous to the Web

If cost is not a foremost consideration, the optimum resolution to the inevitable tension between the dual purposes of KCVL's virtual *Tutorial* is to serve it on two different

platforms—a course management platform consistent with the objectives of the Kentucky Commonwealth Virtual University and the Web, consistent with the needs of a highly diverse cyberpopulation. Each platform will dictate very different design decisions.

If the question of "*which CMS?*" continues to emerge, the following comments are offered to facilitate a discussion about that question…

Course management software is normally assessed from the perspectives of those who are involved in delivering a course: the developer (author/s), the student, the teaching assistant, and the system administrator. The developer is typically the instructor who creates or assembles course content. The student is the recipient or "audience" for the course content. The teaching assistant is frequently the grader, who has access to some but not all of the course tools and may modify a student's record of performance. The system administrator is primarily concerned with providing and supporting server-side resource requirements and CMS-related security issues. However, there are many caveats that emerge in this process of comparatively assessing course management systems. For example, one prominent review site hastens to make the following disclaimer:

> At FutureU, we take the position that satisfaction with any one CMS product is highly subjective and that any attempt at quantitative analysis would therefore be fruitless. Instead, we have developed a checklist of desired features and indicated whether each of the six CMS products either has or does not have each feature. Similarly, we have made no attempt to evaluate the effectiveness of specific features, because we believe that idiosyncratic learning and teaching styles can profoundly influence an individual's assessment of effectiveness. The single quantitative measure we do provide is a score of the number of features in a given CMS product as a function of the total number of features evaluated in this study. (http://www.futureu.com/cmscomp/cms_comp.html)

The following websites present alternative models of CMS evaluation. The criteria differ among the sites as do the breadth of the CMS products evaluated.

Online Educational Delivery Applications: A Web Tool for Comparative Analysis. http://www.ctt.bc.ca/landonline/ This site is designed to help educators evaluate and select online delivery software. The site is produced by the Project Team of Bruce Landon of Douglas College, Randy Bruce, Kwantlen University College and Amanda Harby, Centre for Curriculum, Transfer and Technology. The analysis describes and compares over forty applications with a focus on: technical specifications, instructional design values, media capabilities, tools, ease of use, potential for collaboration and connectivity, and contact information.

Comparison of Online Course Delivery Software Products. http://multimedia.marshall.edu/cit/webct/compare/comparison.html Developed by Marshall University's Center for Instructional Technology, this site attempts to compile "an all inclusive list of products available and all imaginable features" from a compilation of comparisons found at multiple sites. The comparison includes software costs, hardware requirements, technical support, developmental features, student tools, instructor tools, instructional features, administrator tools, and administrative features.

Relative Merits of Courseware Management Tools. http://www.succeed.vt.edu/info/RelativeMerits.htm This is an article collaboratively authored by members of the **S**outheastern **U**niversity and **C**ollege **C**oalition for **E**ngineering **Ed**ucation (SUCCEED), representing North Carolina A & T University, University of North Carolina—Wilmington, North Carolina State University and Clemson University. Evaluation is presented from the unique perspectives of the course developer, student, teaching assistant and system administrator. The Appendix lists the critical questions that pertain to each of these perspectives.

Comparison of WebCT and Blackboard.

http://software2.bu.edu/webcentral/research/courseware/development.html This site was developed at Boston University. It presents a comparison that resulted from hands-on user testing while producing several demo courses on each system. The objective of the reviewers was to go beyond comparing features. They also compared functions. Summary tables enumerate the review criteria for each functional area: (1) course roles and views, (2) site administration, (3) content development, (4) navigation and interface, (5) monitoring participation and progress, (6) assessment, (7) student study tools, (8) group participation, (9) calendar, (10) bulletin boards, (11) chat, whiteboard and email.

Section V: Summary and Conclusions

The authors of the *KCVL Information Literacy Tutorial* are to be applauded for their foresight, their commitment to virtual learning, their collaborative enterprise and the scope of their vision in crafting an online information literacy tutorial that is accessible to all of the citizens of the Commonwealth of Kentucky. Their task was considerable.

Authoring for a widely diverse audience, in a medium that is both dynamic and non-linear is rife with challenges. Moreover, the convergence of Web authorship, Web design and Web-based pedagogy sets the bar even higher. Use of a course management software platform (*Eduprise*) for the development and delivery of the *KCVL Information Literacy Tutorial* introduces yet another variable. There is no definitive blueprint for such an endeavor, only judgment guided by limited research.

Section I of this report reviewed some basic principles of Web design that should be considered prior to a re-design of the KCVL *Tutorial* web site. There is an inevitable tension between the purpose and the packaging of a Web-mediated tutorial. The *KCVL Tutorial* is both a curriculum and a website. The two functions are not necessarily compatible, even under the best design conditions. The rules of the Web require that that the site's structure be defined in terms of what users want when they visit this site. Most users will not want a curriculum. They will want information…as quickly as possible. The instructional objectives of the site need to be transparent.

A website designed to provide a non-curricular learning opportunity for a highly heterogeneous user group presumes that learning happens at the time of need. A user's *need to know* is a critical learning motivator, but writing for the Web needs to anticipate that the typical user is in a hurry (Barger, 1999b). If the purpose of a website is to promote learning, it is essential to present the information succinctly, especially if the authors are trying to hook a person who may be a reluctant learner. Ten minutes is a *long* visit to most sites (Nielsen, 2000).

Web users do not read; they scan text (Morkes & Nielsen,1997; Tarasewich, 2000). Less than 20 percent of site visitors read page content word by word (Nielsen, 1997). Scanning is the norm.

Web users don't scroll (Nielsen, 1996). They will typically stay or leave a site based on the first screen. They will defect when content is balkanized into numerous short pages. Breaking a document up into numerous short 'pages"—the *water torture fallacy*--will cause readers to bail when the Net is slow (Barger, 1999a).

Since it may be said that the defining attribute of a good web site is that it gives visitors what they want and it acknowledges that not everyone is looking for the same information (Smith, 2000), a presentation model that caters to each level of reader interest will result in more satisfied visitors. Every person who visits a website (whether purposefully or accidentally) has either no interest, some interest, or a strong interest. The majority of site visitors will only have some interest (Wallace, 1999).

Site design must also accommodate people who leave and return frequently. It must help users reorient themselves and provide excellent location tools (Nielsen, 2000). Navigational aids must be prominent in the site design. Some suggest that they should be dominant, since only a fraction of an entire website (less than a page) is visible at any one time (Kleinberg, 1998; Lynch & Horton, 2000).

Interaction is likewise crucial to an effective user interface design. Interaction does not need to replicate a traditional classroom experience. The non-linearity of the Web as an information medium implies interaction. Hyperlinks, which are the most essential ingredient of the Web, facilitate user interaction with content. The primary role of hyperlinks is to augment core information when the reader chooses.

Section II presents an evaluation of the *Tutorial* as a Web-mediated curriculum. Some of the recurrent findings were to:

- Consider re-labeling the KCVL *Tutorial* website, using a naming convention that clearly identifies its function (e.g. *CyberCenter for Information Skills*)
- Re-design the *Tutorial* page template in order to both re-format and expand navigational aids, including a site map and site index.
- Cascade the contents list on the vertical navigation bar to enable the user to have immediate access to all skill categories.
- Provide a printable format (HTML and PDF) for each lesson.
- Include a link to a "credits" page on every *Tutorial* page.
- Eliminate structural indicators. Headings should be content-driven.
- Re-format content in byte-size chunks that are clearly labeled for quick scanning.
- Let the content determine the "breaks" between lessons in order to ensure that each lesson is independent.
- Adopt a standard style of delivery throughout the KCVL Tutorial.
- Establish natural breaks in the text in order to visually punctuate separate statements. Some paragraphs present too much text at once.
- Use paragraph breaks, indention, table formats and color screens to create visual interest.
- Be guided by the reason(s) why and when the *Tutorial* site visitor will need the instructional content of each lesson.
- Provide a learning context that answers the questions: "*why do I need to know this*?" or "*how is this useful to me*?"
- Integrate examples within the instructional narrative, selecting only one or two "best" examples.
- Consider selecting examples that advance the learning outcomes of the Tutorial.
- Consider omitting practice exercises. Learning at the time of need frequently mitigates the need for an "exercise." Hyperlink them if they are retained.
- Strive to avoid replicating content by embedding links to the associated content in subsequent or preceding lessons.
- Omit quizzes in individual lessons.

- User feedback should be a permanent feature of the KCVL website, providing formative assessment on an ongoing basis.

Section III provides a summary analysis of the responses to the user survey implemented at the *Tutorial* website between August 4 and September 8. The survey instrument may be found in APPENDIX I and the complete record of survey results is included in APPENDIX II. A total of 51 surveys were submitted. Three were blank and all others had some missing values. Responses generally indicated a full spectrum of expectations and opinions—the likely outcome of a heterogeneous user population.

Section IV addresses the issue of course management software as the sole medium for the *KCVL Tutorial*. The primary advantages of course management software (CMS) are its ability to enroll students, to track their performance and to facilitate learning assessment via grades and instructor feedback. Its significant disadvantages are the constraints it sets on the design and development of HTML/DHTML documents—the heart and soul of the Web. While some course management programs offer more flexibility and greater compatibility with Web-based standards than others, each is designed to put a classroom around the learner. If the sole purpose of the *KCVL Tutorial* is to provide an information literacy curriculum for enrolled students, then any one of several CMSs should suffice. However, since the purpose of the *KCVL Tutorial* is multi-faceted, providing a venue to information skills for a widely diverse audience, then a CMS may be counterproductive.

The optimum solution, given these circumstances, is to split the delivery platforms. Produce a curriculum, designed for a course management platform, and deliver it to enrolled students via the same product chosen by the KCVU. Likewise, produce a dynamic, fully-featured cybercenter for information skills, designed for the Web, and deliver it to learners who seek just-in-time information.

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